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Educational News and Editorial Comment

THE UNIVERSITY OF CHICAGO DINNER

The annual dinner of the University of Chicago which is held during the week of the meeting of the Department of Superintendence will take place at the University Club, Dallas, Texas, on the evening of March 2, 1927. Tickets may be secured from William S. Gray, University of Chicago, for $2.50 each. All alumni and former students of the University are most cordially invited to attend. The members of the Dallas University of Chicago Club will serve as hosts on this occasion.

THE NATIONAL ASSOCIATION OF SECONDARY SCHOOL PRINCIPALS

The National Association of Secondary School Principals will hold its next annual convention in St. Louis, Thursday, Friday, and Saturday, February 24, 25, and 26, 1927.

After very careful inquiry, the Executive Committee decided that, for this meeting, St. Louis is accessible to the larger number of the members of the association. The committee has positive assurance that ample accommodations can be had at the best hotels in St. Louis. In setting the convention just previous to the Dallas meeting of the Department of Superintendence, the committee felt that the association would accommodate a large number who would desire to attend both meetings.

The program will have six sessions, beginning Thursday evening: three general sessions, two sessions separated into junior high school and senior high school meetings, and a luncheon. A sincere effort has been made to make the program interesting and profitable both to junior high school principals and to senior high school principals. Hotel Statler will be the headquarters.

If any high-school principal desires to have a special letter sent to his board of education or to his superintendent, in which it is urged that he be sent to this meeting with his expenses paid, he should send the name and address of the individual to whom such a letter should be directed to the secretary, H. V. Church, J. Sterling Morton High School, Cicero, Illinois.

H. V. CHURCH

NATIONAL SOCIETY OF COLLEGE TEACHERS OF EDUCATION

The National Society of College Teachers of Education will hold its annual meeting in Dallas, Texas, on Monday and Tuesday of the week of the meeting of the Department of Superintendence, February 27 to March 3, 1927. President Walter S. Monroe announces that the morning meetings will be for members only, that the Monday afternoon meeting will be devoted to a discussion of the problem, "Graduate Work and Research," and that the Tuesday afternoon meeting will be a joint session with the National Research Association. A large attendance is expected. The headquarters of the society in Dallas will be the Hotel Jefferson.

THE JUNIOR COLLEGE

On the occasion of its hundredth anniversary, Western Reserve University held an educational conference, the sessions of which were devoted to the discussion of three topics: research, teacher training, and the junior college. A review of the discussions of the first two topics is not especially appropriate in this journal. The discussion of the junior college brought out many considerations which are of great importance to high-school officers.

Professor L. V. Koos reviewed the recent progress of the junior-college movement, showing that there has been a rapid increase in the number of junior colleges organized as parts of public-school systems. He also made it clear that the carrying down of subjects which

formerly were taught even in the upper years of college into the secondary-school curriculum has operated to transform the college into an advanced professional school and to bring into the high school the general courses which are necessary for a basal education. He expressed the belief that the American educational system is rapidly being reconstructed and that it will ultimately become a 6-4-4 system for the administration of a general education followed by graduate and professional training.

Principal L. W. Smith, president of the National Association of Junior College Executives, spoke of the handicap under which the junior college labors because of the regulation frequently insisted upon by the standardizing associations that high-school classes and equipment and junior-college classes and equipment be kept entirely separate. The regulation requiring separation sometimes goes so far as to make it necessary to conduct two libraries in the same building. Dr. Smith made a plea for freedom on the part of institutions to make common use of equipment and staff for high school and junior college. He also pointed out the impracticability of conducting any two-year educational institution.

Principal William F. Ewing reported on the development of junior colleges in California. He presented certain facts as follows:

The number of students enrolled in junior colleges in California, the number of graduates from high schools in California, and the percentage which the former is of the latter are shown in Table I.

TABLE I

Year	Number of Students Enrolled in Junior Colleges	Number of Graduates from High Schools	Percentage of High-School Graduates in Junior Colleges
1920–21.....	1,495	13,234	11.3
1921–22.....	2,077	14,429	14.4
1922–23.....	2,905	16,939	17.1
1923–24.....	4,009	18,868	21.2
1924–25.....	5,271	21,924	24.0

In 1923–24 the number of Freshmen enrolled in the junior colleges of the state exceeded the number of Freshmen enrolled by the University of California at the combined sessions in Berkeley and Los Angeles. In 1924–25 the number of students enrolled was more than five thousand, more than half the

enrolment of all students on the Berkeley campus of the university. When every portion of the state has its own regional junior college, it is likely that the larger universities will see fit to discontinue the freshman and sophomore work.

The Pasadena High School and Junior College is a secondary school, including Grades X–XIV. The physical plant and equipment are rated as among the best in the West. The area of the high-school and junior-college district is 127 square miles; the assessed valuation of the district is $131,181,545. The area of the campus is forty acres. There are seventeen buildings on the campus. Table II shows the valuation of the buildings and equipment.

TABLE II

	Valuation
Site	$ 972,000
Buildings	788,635
Laboratory apparatus	71,696
Other apparatus	2,507
Furniture	31,291
Other equipment	18,500
Library books (17,163 volumes)	40,326
Textbooks (37,186 volumes)	27,303
Supplies on hand	3,000
Total	$1,955,258

The school is organized to render the greatest possible educational service to secondary-school students and to adults. For the former group, regular day high-school and junior-college classes have been organized and maintained. The enrolment is given in Table III.

TABLE III

	Number of Students
High school:	
Day:	
Grade X	1,449
Grade XI	806
Grade XII	636
Postgraduate	46
Evening (adults)	4,073
Total	7,010
Junior college:	
Day:	
First year	357
Second year	143
Afternoon continuation (adults)	318
Total	818
Grand total	7,828

Table IV shows the number of high-school students who satisfactorily completed the requirements for graduation.

TABLE IV

Date of Graduation	Number of High-School Graduates
June, 1921	370
June, 1922	392
June, 1923	449
June, 1924	466
June, 1925	475
June, 1926	530

Table V shows the junior-college budget and the rental for the use of the high-school plant.

TABLE V

Year	Junior-College Budget	Junior-College Rental for Use of High-School Plant
1924–25	$ 53,000	$15,000
1925–26	95,000	25,000
1926–27	157,000	35,000

Other speakers on the program were Professor R. J. Leonard, Dean Carl E. Seashore, President G. F. Zook, and President G. W. Rightmire.

It was brought out in the course of the discussion that there is a strong temptation for communities which are not large enough to support well-equipped junior colleges to add one or two years to the high-school curriculum and thus to deprive the lower schools of adequate support at the same time that they supply students of college age with inadequate educational opportunities. As a partial safeguard against such undesirable extension of the junior-college movement, it was suggested that the sanction of the state department of education be made a necessary condition for the establishment of a junior college.

President R. E. Vinson, of Western Reserve University, supplemented the discussion of junior colleges in general by pointing out the fact that Western Reserve University can no longer expand its building equipment on the present site. He expressed his belief that the wisest policy for that university will be to remove its junior college to a site remote from the present campus where plenty of space

can be secured and where the separation of the junior college from the senior college will give opportunity for the evolution of a new kind of curriculum and a new technique of teaching appropriate for younger college students.

RELIABILITY AS A MEASURE OF THE VALUE OF A TEST

Readers of the article by Edith L. Hammond in this issue of the *School Review* may be misled concerning its significance unless they are familiar with the technical meaning of the term "reliability." A test is often described loosely as "reliable" when it is meant that the test is an adequate and an accurate measure of the ability which it is intended to measure. In this use of the word, a "reliable" test is one which can be relied upon, one which is satisfactory from every point of view. It would not be necessary to inquire further concerning a test if it were found to be reliable in this broad sense of the term. A test may be reliable in the technical use of the term, however, and still fail to be a satisfactory test. The technical use of the term "reliability" is narrower than its popular use. Technically, the word designates only one of the two important characteristics of a test. Psychologists have distinguished these two characteristics by naming one "reliability" and the other "validity."

"Reliability" in the technical sense means "consistency." A test which is reliable yields the same scores when it is repeated; that is, each pupil is ranked the same, or nearly the same, when the group to which he belongs takes the test a second or a third time. If a pupil's ranks on successive repetitions of the test vary widely, the test is unreliable. In such a case, one could not predict a pupil's score on a subsequent test from a knowledge of his score on a previous test. "Reliability," then, means "predictability."

Validity is quite a different characteristic. It is concerned with what the test measures. A test is "valid" if it measures the ability which it is intended to measure. A test may lack validity because it measures something entirely different from what it is intended to measure or because it measures only a part of what it is intended to measure. For example, an arithmetic test may be couched in such unusual and difficult language that it measures reading ability more than it measures arithmetic ability. Such a test is lacking in validity.

Securing reliability is largely a technical problem in test construction. Securing validity, on the other hand, requires a careful analysis of the ability which is to be measured. The customary method of measuring the validity of a test is to compare scores made on the test with some accepted measure of the ability in question. The difficulty is that we usually do not possess this previously validated and accepted measure. If such a measure existed, the new test would be unnecessary.

The problem of validity is often not clearly recognized, especially in the case of educational tests. It is assumed that, by the exercise of common sense, one can determine what is measured by the test and the abilities that should be included among those measured by the test. On the contrary, it is necessary to study the validity of a test with great care, even though this characteristic may be more difficult to determine by the application of a simple statistical procedure than is reliability. A test must, of course, be reliable to begin with, but determining its reliability is only the first step and by far the easiest in determining its character.

The purpose of this discussion is not to disparage studies of reliability. It is rather to call attention to their limitations. We are in some danger of subordinating the aims of instruction to the technique of test construction. If we assume that, because a test is reliable, it is also valid, we shall conclude that the abilities which are measured by the test may be made the objectives of instruction. This is putting the cart before the horse. The test must rather be constructed so as to measure the abilities which have already been determined to be the legitimate objectives of instruction. This requires not only a knowledge of what these abilities are but also a scientific determination of the fact that the test measures them. This is the determination of the validity of the test. It is a necessary complement of the determination of the reliability of the test.

A NEW SYSTEM OF MARKING

The faculty of the Maine Township High School, Des Plaines, Illinois, has adopted a plan of marking pupils which was suggested by G. M. Fisher, a member of the faculty. The system is described in a circular, from which the following paragraphs are quoted.

The new system will be applied this year to the entering Freshmen, next year to the first- and second-year pupils, until, by gradual adoption, it is applied to all four classes. The grades of the first-year pupils, arrived at as usual, will each be divided by the median or middle grade of the group, a group being one or more classes in the same subject, taught by the same teacher and having the same classification. . . . .

The new method will raise the passing grade from 70 to 87 and will make the standing of the average pupil 100. Similarly, provided the median under the old system is 80, a mark of 75 will become 93 under the new system. A mark of 80 will become 100; 85 will change to 106, 90 to 112, 95 to 118. Under the new system, one can readily see at a glance whether the pupil is doing above or below average, as the average is 100, and there will be as many marks above 100 as there are below 100. The maximum grade will be 120.

Since each grade is divided by the median and as 100, leaving out decimals, will always be the median, or average, grade, it follows that 107 will mean 7 per cent above the median; 87 will be 13 per cent below the median. This plan gives a simple way of comparing each pupil with the other pupils of his group and of passing this information on to the parents and to the college he will later attend.

By drawing a clear and simple chart of the pupil's relative achievement in his own group, the new system not only will be illuminating to parents, teachers, and sponsors but should directly stimulate the pupil to better work. Even a bright pupil, in an A group, will hate to confess that he is below the average of his group. So much the more will one whose intelligence quotient, or I.Q., is 120 or more, that is, 20 or more above average, be dismayed to see his achievement in an eighth-grade graduating class fall below 100, the average of his class. This will be especially true if the parents know how bright he is, and we parents usually know that their I.Q.'s are 120, even when they are not.

The median I.Q.'s of the freshman groups at Maine this year are as follows: The median I.Q. of the A's is 113; of the B's, 99; the C's, 86; the C D's, 80.

From this it follows that an A pupil whose I.Q. is 113, a B pupil whose I.Q. is 99, a C pupil whose I.Q. is 86, and a C D pupil whose I.Q. is 80 should each earn a grade of about 100 if their work is in keeping with their intelligence. We should not forget, however, that the intelligence quotient, obtained by dividing the mental age by the real age, measures mental alertness, quickness, brightness, information, knowledge, and skill in reading. It does not measure grit, mental courage, persistence, willingness to work, and determination to succeed. These qualities constitute a large part of our intelligence, and they cannot be measured, except by results. That is why some pupils with I.Q.'s of 79 skip the C D's and the C's and lead the B's. That is also why others with I.Q.'s of 130 or 140 would make poor records in B classes if, by mistake, they were allowed to do so.

ABILITY GROUPING IN NEW YORK HIGH SCHOOLS

Pupils are grouped according to ability in approximately 35 per cent of the junior and senior high schools in the state of New York, according to 497 replies received to a questionnaire sent out by the educational measurements bureau of the state department of education to ascertain the extent to which there is grouping in the high schools. Grouping is usually effected in the ninth grade; it is generally based on intelligence tests although it is frequently based on the teacher's estimate of the pupils' ability or on their marks in school. In 147 schools, pupils of different ability are grouped in separate classes, and 109 schools reported that ability groups are formed within classes. Some schools use both procedures.

TUITION FOR PHILIPPINE SCHOOLS

The following item quoted from the *United States Daily* shows the difficulty of maintaining public education in a country where social and economic conditions are less favorable than they are in the United States. It may serve as a concrete indication of the kind of advantages which American pupils enjoy but often do not appreciate fully.

The possible necessity of charging a tuition fee in the public schools of the Philippine Islands has come to the attention of the Bureau of Education, Department of the Interior. The fee, it was stated, may be essential to provide sufficient funds to keep the schools in operation.

A statement of the Bureau of Education follows in full text.

"Manila school authorities are considering the imposition of a fee next year, for resident students, of 10 pesos for tuition in first- and second-year high-school classes and of 20 pesos in the third- and fourth-year classes.

"For provincial students in intermediate schools in Manila it is proposed to charge 50 pesos and for provincial students in high schools 100 pesos. This is to prevent the financial crisis which has been arising every year in Manila schools. Tuition is now charged in many provincial high schools in the Philippines in order to keep them in operation."

THE EXTENDED SCHOOL YEAR

The Bureau of Education published the following report.

Practically all the schools of Denmark are in session 246 days a year. The average loss per pupil on account of illness is 8.6 days a year.

OFFICIAL ORGAN OF THE FACULTY OF THE SCHOOL OF EDUCATION OF BOSTON UNIVERSITY.

With the beginning of Volume XXX, *American Education*, which has had a long and honorable career as a school journal, passes into the control of the School of Education of Boston University. The articles published in the first issues show that *American Education* is more than ever to promote the scientific movement in education.

Readers outside of New England will note with great interest the first editorial published by the new editors, describing the need of an educational awakening in New England. The editorial is as follows:

American Education seeks to be of special service to the schools of New England. And New England needs a great and peculiar service.

New England of today is the heir of all the glorious history of three hundred years of American life and institutions. But it is the heir also of its prejudices. New England has been a land of convictions, but some of these convictions have been no credit to her. The conviction that the earliest comers have supreme rights in race, religion, and commerce; that a man's business is his own and that the employees have no rights in it; that the old Yankee race and the Protestant religion were the called-of-God to dominate this region; that the immigrant is welcome as cheap labor but must expect to remain a subordinate.

A new spirit and a new consecration must come to the schools of New England that they may build up in the minds and hearts of our boys and girls a new ideal of tolerance and of social co-operation. The newer peoples in New England are here to stay and have a real and permanent contribution to our national life, and it is the function of the schools to stimulate an interest in national and community service to the end that all our people, older and newer settlers, come to a fuller sense of unity and good will. Americanization is a problem not only of the recent immigrant but also of those who have little love for him.

Every public-school teacher of New England requires a larger acquaintance with the social and economic conditions of our section of the country: why the rural regions are thinning out; why various industries have much dissension and others none; what social and economic changes are going on under our eyes and the results likely to follow; what are common instead of divisive elements of our various religions and how the sanctions of religion may be used in home, church, and school for the good of the nation; how our manual skill, renowned for a century, may be conserved and augmented so that we may hold our own against the industries of the rest of the country.

New England is provincial but not provincial enough in its local loyalties

and in faith in its future. We have here all the elements that make for skill of mind and of hand, for growth in intelligence and success in industry. Has the school such vitality as to compound these elements and to meet the need?

If the task of the school is to fit young people for society, we need in New England to conceive society as a real thing, right here, of which we are a part, with our special local problems and local assets, and it is for this immediate environment that our boys and girls must be fitted—not too narrowly, of course, but much more fully and more intensively than heretofore. And herein are questions of organization, curriculum, methods, but especially of spirit.

Are the schools of New England adequate to New England life?

HOW ATHLETES ARE TREATED IN HIGH SCHOOL

In a recent issue of the *School of Education Journal* of the University of Pittsburgh, R. E. Iffert and Q. A. W. Rohrbach have reported the results of an inquiry into the attitude of high-school pupils toward athletics. Among other questions, they asked pupils the following: "Have you ever felt that preference or partiality was shown toward the athlete by the superintendent or supervising principal, the high-school principal, the athletic coach, the teacher, the student body, the school board, the people of the town or community? (If you wish you may state how.)" The replies are summarized in the following table.

	Percentage of Pupils Replying "Yes"	Percentage of Pupils Replying "No"
1. Superintendent or supervising principal	12.8	52.3
2. High-school principal	21.0	52.5
3. Athletic coach	47.0	29.1
4. Teacher	45.8	34.6
5. Student body	51.7	20.8
6. School board	9.9	66.3
7. People of the town or community	36.0	33.1

The following comments supplement the data presented in the table.

In this connection the following observations become apparent: (1) The percentages given for the various individuals or groups are of the total number of questionnaires returned rather than of the total number of pupils answering the specific question. This will explain the apparent inconsistencies in the totals. (2) Less than 1 per cent of the pupils expressed a criticism of either the high-school principal or the supervising principal, and these pupils objected to the

granting of special privileges to the athlete. (3) Although a relatively high percentage of pupils felt that preference was shown by the athletic coach, very few stated the manner in which it was shown. Some felt that football players were given preference in basket ball and that cliques and gangs were favored. (4) The teacher was treated more leniently by the pupils as a whole, but a much larger number seemed willing to be specific in their criticisms. Three and five-tenths per cent of all the pupils said that teachers gave higher marks to athletes so that they could play. Some said that it was easier for athletes to be excused from class, and a few, all of whom were athletes, said that teachers made them work harder because they had a weapon to hold over them. (5) The highest percentage of affirmative answers to this question fell to the student body themselves, but relatively few of them expressed themselves as to the manner in which the partiality was shown. A few said that athletes were pampered and favored and made to feel that the entire school was worshiping them; others said that many pupils helped the athlete to pass in his class work. (6) The few who expressed any grievances against school-board members indicated by their statements that there was no criticism of them as officials but only as citizens. (7) Two and six-tenths per cent of the pupils felt that the people of the town or community gave preference to the athlete when he or she was seeking a position. Some complained that too much emphasis was placed on athletic ability as compared with scholarship.

EDUCATIONAL PSYCHOLOGY

In recent years students of education have been told by a number of writers on psychology that the facts about mental life which are most important for those who are seeking a scientific basis for school methods are the facts regarding instincts. Next in importance to a knowledge of the instincts, some writers tell us, is information about the nervous system. There is a school of psychologists that has gone so far as to be satisfied to reduce all the higher mental processes to mere aggregations of elements which are the same in quality in man and the animals, in mature and immature human beings. To such thinkers the only difference between thought of the most abstract type and thought of the most primitive concrete type is in the number of elements involved.

The type of psychology to which reference is made in the foregoing paragraph is readily accepted by students because it seems to be captivatingly simple. Furthermore, it has the advantage of using biological terms and therefore sounds scientific. It uses the term "quantity" freely and therefore seems to have the virtue of mathematical exactness.

It is a relief to find in the midst of such shallow, artificially simplified thinking a wholly different type of statements by a real scientist, who speaks of the nervous system with authority and also speaks unequivocally in favor of the truth that the higher mental processes are not instincts nor combinations of instincts. Professor C. Judson Herrick, who has recently written on this matter in a volume entitled, *Brains of Rats and Men*, speaks in no uncertain terms in an article published in the *Psychological Review*. What he says is of great importance to educational psychology. All who are interested in a clear scientific understanding of human mental processes should consider carefully the following paragraphs as typical of a position which is much more productive for education than "instinct psychology" or superficial comments on mental elements.

Reflex and instinctive action function largely in terms of racial experience. The association centers, on the other hand, form in the aggregate the great storehouse of personal memories, the residua of individual experience. These centers contain countless nerve cells with short axons (type II neurons) whose connections are such as to permit their activation in relation with each one of numerous different associational patterns, thus making possible a great influx of nervous energy in addition to that of the neurons which form the essential links in the particular associational chain at the moment active.

These cortical reserves are drawn upon, not like those of the lower brain centers to reinforce the administrative machinery of structurally predetermined reactions, but to co-operate in determining on the basis of personal as well as racial experience what act is appropriate to the present situation. This is a distinction of far-reaching importance. It is the presence of the cortical reserves, partly unformed and mobile and partly laid down as definite mnemonic patterns or engrams, that makes constructive thinking possible, a process in which residua of former experience are reassembled in new patterns.

Now, colligated with the amplification of the cortical apparatus for registering and reactivating the mnemonic and other reserves of the human associational fields, we observe the elaboration of symbolic thinking and the emergence of new capacities to formulate uniformities of experience, to project these uniformities into the future, and so to predict coming events.

This forward projicience of experience is not a new and mystical "force" added from the outside to our biological impulses to transform them into voluntaristic purposes. On the contrary, since all mental acts are functions of the nervous system, human purpose and choice in view of probable future contingencies are simply functions of a different sort of nervous system from that tiny speck of nervous matter which sets the direction of the insect's reflexes.

The forward reference of reflex and instinctive behavior, its biological adaptiveness, is not in lower animals, so far as we know, accompanied by any

"mentalistic something" that in our own experience we identify as purpose. . . . .

This power of conscious choice in the light of probable future contingencies, again, has not grown up out of nothing. It is an amplification of the "forward reference" of those reflex and instinctive reactions already considered. The "end" which in the reflex is attained blindly is here purposefully striven for. Even in the simplest verbal symbolism the internal apparatus of this forward reference is far more elaborate (especially in its social implications) than in the most complex instinct, as Dewey has shown.

FAILURES AND WITHDRAWALS IN NEW HAMPSHIRE HIGH SCHOOLS

In a publication of the State Board of Education of New Hampshire reporting the conditions in the secondary schools of that state, Walter M. May, deputy commissioner, and William Y. Morrison, high-school agent, present the following table showing the causes of "discharges" from high schools from June, 1925, to July, 1926.

Cause	Number of Pupils Discharged	Percentage of Pupils Discharged	Number of Pupils for Whom Failures Were Not Given	Number of Pupils Who Failed in One Unit	Number of Pupils Who Failed in Two Units	Number of Pupils Who Failed in Three or More Units	Total Number of Pupils Who Failed in One or More Units	Percentage of Pupils Discharged Who Failed in One or More Units
Changes in family condition	175	5.1	2	17	12	7	36	21
Death	19	0.6	.....	.....	.....	.....	.....	.....
Employment	847	24.9	26	130	89	111	330	39
Ill health	232	6.8	3	22	20	19	61	26
Lost interest	416	12.2	.....	56	87	73	216	52
Moved	811	23.8	10	74	47	41	162	20
Outclassed	227	6.7	4	26	49	103	178	78
Selfishness of parents	101	3.0	.....	4	6	1	11	11
Transferred to another New Hampshire school	290	8.5	39	18	32	22	72	25
Weakness of pupils	149	4.4	.....	14	18	59	91	61
Unknown	136	4.0	.....	4	9	3	16	12
Total	3,403	100.0	84	365	369	439	1,173	35

Such tables as this from different states would give much valuable material on the basis of which the social conditions of high schools in different parts of the United States could be studied.

STATISTICS WHICH SHOULD BE KEPT ON FILE IN THE OFFICE OF THE HIGH-SCHOOL PRINCIPAL

LEIGHTON S. THOMPSON
Edward F. Searles High School, Methuen, Massachusetts

Because there seems to be little unanimity of opinion concerning the statistics which should be kept on file in the office of the high-school principal, the writer undertook to discover, if possible, the general practice among school men in keeping records.

After considerable thought, it seemed wise to attack the problem from four different angles as follows: (1) to determine from a study of school reports the subjects that have been dealt with by high-school principals in their annual reports, (2) to determine from various surveys the type of information the surveyors are interested in recording, (3) to correlate (1) and (2), if possible, and (4) to send a questionnaire constructed on the basis of the foregoing investigation to representative high schools throughout the country. Finally, it was decided to make some personal observations as to which statistics should be passed on to the superintendent of schools and which should be made available to the public.

The educational directory of the state of Massachusetts for 1924 lists 245 high schools. There are on file in the library of Harvard University school reports from ninety cities and towns in Massachusetts, all of which were examined carefully in compiling the statistics here presented. As it was felt that these ninety reports would offer a very fair sampling of the total number, no additional reports were considered. The reports extend over the years 1911–24. In thirty-seven cases the report does not include a report from the principal of the high school. Table I shows the frequency with which certain general items appear in the remaining fifty-three reports. This table omits the items dealing with war activities which appeared in many reports during the war years. It was felt that these items represent abnormal situations, which were not worth recording for the purposes of this article.

The writer has always been located in a town in which a principal's report was required, and he was rather surprised, therefore, to

TABLE I

FREQUENCY OF VARIOUS GENERAL ITEMS IN THE ANNUAL REPORTS OF HIGH-SCHOOL PRINCIPALS IN FIFTY-THREE CITIES AND TOWNS IN MASSACHUSETTS (1911–24)

Item	Frequency	Percentage of Frequency
1. Statistics	47	89
2. Social problems	28	53
3. Physical training	23	43
4. Crowded conditions	20	38
5. Occupations of graduates	20	38
6. Changes in teaching staff	20	38
7. Discussion of curriculums	15	28
8. Curriculum enrichment	11	21
9. Attendance	9	17
10. Discussion of scholarship	8	15
11. Elimination	8	15
12. Lack of interest of pupils	7	13
13. New equipment necessary	6	11
14. Lack of interest at home	4	8
15. Discussion of parents' night	4	8
16. Desirability of a longer school day	4	8
17. Gifts to school acknowledged	4	8
18. Use of intelligence tests	3	6
19. Lack of manual-arts work	3	6
20. Discussion of junior high school	3	6
21. Discussion of results of examinations given by the College Entrance Examination Board	3	6
22. Discussion of marking systems	3	6
23. Insufficient teachers	2	4
24. Desirability of summer schools	2	4
25. Reinstatement of German	2	4
26. Desirability of department heads	2	4
27. Value of high-school education	1	2
28. Graduation program	1	2
29. Junior college	1	2
30. School banking	1	2
31. Washington trip	1	2
32. Five-year college preparation	1	2
33. Semiannual promotions	1	2
34. Discussion of salary schedules	1	2
35. Discussion of certificate privileges	1	2

find that a large percentage of the town reports which were examined include no principal's report as such. Several reasons for this omission can be suggested: (1) In the case of many of the small towns the superintendent of schools is also the high-school principal. (2) In some of the small towns there is no high school, the pupils of high-

school age being sent to neighboring communities. (3) With one exception, the reports from cities having more than one high school include no principal's report, but in these cities various high-school statistics are incorporated in the superintendent's report; probably each principal submitted a report, and the reports were consolidated. One factor which may be mentioned in this connection is that it might be possible for a superintendent to misinterpret some item reported to him by a principal and thus bring about a misunderstanding.

Comment on all the items listed in Table I cannot be attempted here, but certain facts which seem pertinent will be mentioned.

Since we hear so much criticism of the modern young people, it is not surprising that Item 2, "social problems," occupies a prominent place in the list. The prominence of this item is also to be explained in part by the varied subjects included: (1) problems of school dances, (2) club problems and other activities within the school, (3) pupil participation in assemblies, (4) pupil regulation of traffic, (5) pupil problems outside the school, (6) deans, etc. It is apparent that schools are recognizing these problems and are seeking to solve them by enlisting the interest and support of the parents.

Item 3, "physical training," is discussed both from the standpoint of interschool athletics and from the standpoint of individual physical training within the school. Commercialism is deplored, and many reports point out that practically nothing is being done in most high schools to improve certain physical conditions, such as incorrect posture. Adequate gymnasium space to comply with the state law seems to be lacking in many cases; Massachusetts does not seem to be alone in this respect, however, because a recent study made in Connecticut shows that gymnasium space is lacking in sixty-nine schools out of eighty in the state. Attention should also be called to the fact that many schools having periods of from forty-two to forty-five minutes without adequate time or facilities for shower baths are seriously handicapped, because, in the opinion of the writer, physical exercise which is worth anything at all should produce perspiration, and a system which forces pupils to return to their classroom work without a bath and change of clothing may be productive of more harm than good.

The importance of Item 5, "occupations of graduates," can be explained in part by the fact that the discussion as handled by most of the reports seems to be an attempt to refute the statement, "Our high school does not prepare adequately for college."

It is a generally accepted fact that 24 per cent of all high-school graduates go to college while only 6 per cent of those who graduate from high school enter institutions requiring examinations. It seems unfortunate that many of the best people in our cities and towns persist in judging the success of a comprehensive high school purely on the basis of college preparation. These people point to the fact that higher scholastic attainment is possible in our preparatory schools. This may be true on account of the fact that *all the pupils* have a definite objective toward which they are working, while in the comprehensive high school many pupils have no definite challenge to meet which would be comparable to that of the college-preparatory pupil, who knows he must meet the certification requirements of some college or of the College Entrance Examination Board. Perhaps the same scholastic differences exist between the preparatory school and the comprehensive high school as exist within the school itself between the college-preparatory group and the others. So far as the writer is aware, no attempt has ever been made to measure the success of the 75 per cent who go to work after graduating from high school, and yet we like to think that these pupils become useful members of the community and of society in general.

The statement is commonly made that the modern home is failing to do its duty, and it is not surprising to find Items 12, 14, and 16—"lack of interest of pupils," "lack of interest at home," and "desirability of a longer school day"—mentioned in the reports. The average pupil probably does not work up to his capacity, but there are certainly more methods of measuring this fact objectively at present than there were some years ago, and it may be that this statement was just as true in our own high-school days as it is now.

It would seem that Item 18, "use of intelligence tests," should have received a more prominent place in the list. The school report should be a fruitful method of educating the public, and, in the experience of the writer, any scheme for the segregation of pupils on the basis of ability or the formation of special classes for backward

children must be supported understandingly by the parents or it is doomed to failure.

Many of the reports seem to offer little material of a constructive character, and many of them seem to have been written with little careful thought. The following definition of a principal's report is offered. It is a statement, to be placed before the voters, of those needs and problems of the school which happen to be most urgent at the time of writing. It also may be a means of educating the public concerning the things which the school is trying to do.

The next step in the problem was an examination of various high-school surveys in order to determine the type of material which the makers of these surveys were interested in recording.

The surveys available were of two sorts: those dealing with states and those dealing with cities. The surveys dealing with states, such as the Virginia survey, conducted by A. J. Inglis and others, seem, for the most part, to be concerned with the geographical distribution of the population, the question of floating bond issues, and, in general, a type of information which would be more likely to be found in the office of a superintendent of schools. On the other hand, the surveys dealing with cities, such as the West Hartford survey, conducted by the Connecticut State Board of Education in 1922, were found to contain a type of information more nearly in line with the theme of this article. An examination of these city surveys showed that the following types of information were recorded:

1. Elimination
2. Occupation of graduates
3. School enrolment over a period of years
4. Record of teacher-training
5. Record of teacher turnover
6. Discussion of teachers' salaries
7. Ratio of teachers to pupils
8. Problem of teacher load
9. Distribution of marks
10. Record of graduates entering college by certificate and by examination
11. Record of graduates' first year in college

After careful study of the available state and city surveys and a tabulation of the items, it seemed that there was not sufficient correlation between the first and second parts of the investigation to

solve the problem in an adequate fashion. Much attention was therefore given to the fourth part of the investigation.

The items on page 21 were suggested by the examination of high-school reports, by the examination of city surveys, and by the suggestions and criticisms offered by the class in the Harvard Graduate School of Education in which the investigation was conducted.

The questionnaire was sent to fifty members of the National Association of Secondary School Principals, thirty-six of whom mailed returns. Eleven questionnaires were returned by members of the class in the Harvard Graduate School of Education, while sixteen more came from a club of high-school principals of which the writer is a member. The information contained in the table showing the results of the questionnaire therefore represents the practice of sixty-three schools.

It is assumed that the following records are kept by all principals: (1) program cards; (2) enrolment cards showing address, telephone number, etc.; (3) scholarship records; and (4) records of eye and ear tests (required by law in Massachusetts).

The following statements present arguments for the twenty-three items listed in the questionnaire.

1. The enrolment by grades seems desirable in order to determine the holding power of the school and to check figures of elimination.

2. The enrolment by curriculums would show the trend and would be helpful in making future building plans.

3. The enrolment by subjects would give the facts necessary in deciding whether to drop a subject from the curriculum.

4. Elimination during the summer was not thought necessary by those who answered the questionnaire, but the writer feels that a high school should be concerned with pupils of high-school age irrespective of whether they are technically enrolled or not.

5. Elimination during the school year is important in order to determine the holding power of the school.

6. The causes of elimination are usually hard to determine, but, if one can find the cause, it sometimes turns out to be an imaginary one or at least one that can be removed so that the pupil may return to school.

AN INVESTIGATION TO DETERMINE WHAT STATISTICS A HIGH-SCHOOL PRINCIPAL SHOULD KEEP ON FILE IN HIS OFFICE

	K	D	N
1. Enrolment by grades: Grades IX, X, etc.			
2. Enrolment by curriculums: college preparatory, etc.			
3. Enrolment by subjects: English, first year; etc.			
4. Elimination during the summer			
5. Elimination during the school year			
6. Causes of Nos. 4 and 5			
7. Follow-up record of pupils who repeat subjects			
8. Record of teaching load of each teacher in pupil hours: number of pupils in class times the number of times the class meets during the week			
9. Follow-up record of all graduates			
10. Intelligence scores			
11. Distribution of teachers' marks by subjects			
12. Distribution of teachers' marks by teachers			
13. Distribution of teachers' marks by grades			
14. Correlation of marks with intelligence scores			
15. Attendance records			
16. Record of results of examinations given by the College Entrance Examination Board			
17. College records of students who enter by certificate			
18. Record of pupil participation in extra-curriculum activities			
19. Costs of instruction			
20. Record of teachers' experience and training			
21. Conduct record of all pupils sent to the office			
22. Proper accounting of funds not appropriated by board of education			
23. Historical record of the school			
24. Other items			

Will you please check those items under Column K which you keep, those under Column D which you believe would be desirable to keep, and those under Column N which you do not believe necessary.

Name _____ School _____

7. Pupils repeat subjects possibly for three reasons: (1) laziness, (2) inaptitude, (3) absence. Sometimes the pupil who fails to measure up to the demands made by a certain subject repeats the subject and lays a good foundation for further pursuit of this subject, while other pupils do not do very much better work at the second attempt. It seems desirable to keep a record of those pupils for whom repetition of subjects was productive of good results.

8. The record of the teaching load is desirable in order to keep the record of the ratio of pupils to teachers and to distribute the teaching load evenly.

9. The follow-up record of graduates is difficult of accomplishment, but it seems desirable at least for one year in order to discover the business pursuits for which the school is fitting its pupils.

10. The record of intelligence scores seems desirable for the proper guidance of the pupils.

11, 12, and 13. The distribution of the teachers' marks would seem desirable for the purpose of checking up on teachers who mark either too low or too high, of discovering those subjects showing high or low percentages of failure and of determining the causes, and of maintaining a reasonable distribution of marks.

14. Correlation of marks with intelligence scores was suggested by the fact that many schools give intelligence tests but do not use the results in the best possible manner.

15. Attendance records are required by law.

16. Record of examinations given by the College Entrance Examination Board is desirable in order to check the work of the various departments within the school.

17. College records of students admitted by certificate are desirable for the same reason.

18. The record of pupil participation in extra-curriculum activities is desirable for the permanent records of the school and in some cases to determine a pupil's eligibility.

19. The item "costs of instruction" was included because the writer believes that the high-school principal should hold himself responsible in some measure for his share of the annual budget.

20. The record of the teachers' training is important in order

that the principal may know the training and experience of the instructors who are employed.

21. The "conduct record of all pupils sent to the office" was perhaps an unfortunate wording because some of those answering assumed this to mean that all sorts of minor offenses were to be recorded. It is probably true that most schools have some teachers who send pupils to the office for all sorts of minor offenses, which, of course, should not be charged against the pupils. On the other hand, it seems desirable to keep a record of major infringements of discipline.

22. The writer believes that proper accounting of funds, such as lunch counter, athletics, etc., is absolutely necessary for the protection of the principal himself.

23. The historical record of the school is difficult to keep up to date, especially in the small school where the principal often remains but a short time. The record, however, is desirable.

It seems apparent from Table II that most of those reporting recognize that the items listed are desirable but, owing to the lack of time or of adequate clerical assistance, the records are not kept.

It seems that Item 14, "correlation of marks with intelligence scores," was misunderstood by many of those reporting, or else there is considerable wasted effort in connection with intelligence testing. The data show that, while thirty-eight principals keep records of intelligence scores, only sixteen attempt to correlate these scores with the achievement of the pupils. There seems to be little excuse for the giving of intelligence tests if no attempt is made to use the results in a constructive manner.

At the bottom of the questionnaire space was left for additional items to be inserted. The following suggestions were made:

1. Intelligence tests used for failing pupils only
2. Record of building inspection
3. Record of pupils employed while in school
4. Record of parents' signatures
5. Pictures of pupils
6. Proposed occupations after graduation
7. Nurse's report on emergency cases
8. Cost of operation of lunchroom
9. Intelligence tests given in ninth grade only

10. Intelligence tests given in twelfth grade only
11. Record of excuses
12. Copies of letters written home
13. Record of letter men and managers of various sports

TABLE II

RESULTS OF QUESTIONNAIRE

Item	K	D	N
1. Enrolment by grades	59	3	1
2. Enrolment by curriculums	38	14	10*
3. Enrolment by subjects	33	12	18
4. Elimination during the summer	34	18	11
5. Elimination during the school year	50	10	3
6. Causes of Nos. 4 and 5	30	23	10
7. Follow-up record of repeaters	28	30	5
8. Record of teaching load	52	10	1
9. Follow-up record of graduates	15	37	11
10. Intelligence scores	38	20	5
11. Distribution of marks by subjects	42	12	9
12. Distribution of marks by teachers	39	13	11
13. Distribution of marks by grades	27	12	24
14. Correlation of marks with intelligence scores	16	34	13
15. Attendance records	60	0	3†
16. Record of examinations of College Entrance Examination Board	41	15	6‡
17. College records of students entering by certificate	32	25	6§
18. Record of pupil participation in extra-curriculum activities	32	25	6
19. Costs of instruction	20	18	25‖
20. Record of teachers' experience and training	50	10	3
21. Conduct record of pupils sent to office	36	17	10
22. Proper accounting of funds not appropriated by board of education	53	4	6
23. Historical record of the school	17	31	15

* One classical high school.

† Attendance records in some schools are kept by special teachers.

‡ One commercial high school.

§ So far as reports are supplied by the colleges.

‖ Most of those reporting believe this to be a function of the superintendent.

The following are brief comments on some of the additional items.

1. It has been a common criticism of our schools that we pay too much attention to the backward pupil at the expense of the bright pupil. When intelligence tests are given to failing pupils only, it seems that this statement is true. Probably the particular school was limited in time or money or both and the failing pupils were the most immediate problem.

3. The record of pupils employed while in school commends it-

self as being worth-while information for the office to keep in connection with the pupils' individual records.

4, 5, 11, and 12. The four items might be discussed under one heading and included in what many schools keep in the so-called "envelope system." All information concerning the individual pupil is kept in an envelope file for the entire four years.

6. The writer has tried with several classes to get an idea of the proposed occupations after graduation but has found so little agreement between what actually takes place and what the pupil proposes to do at the beginning of his senior year that investigations of this sort seem hardly worth while. It probably makes some pupils do some thinking on the subject, however; from this standpoint it is doubtless desirable.

7. The nurse's reports might be kept on file so that they would be available to the principal instead of being kept by him.

8. The cost of operation of the lunchroom might be included in the item in the questionnaire referring to the proper accounting of funds not appropriated by the board of education.

9 and 10. There seems to be considerable difference of opinion as to the proper age at which intelligence tests should be given, and many authorities believe that they should be given before the period of secondary education. Certainly if such tests are to be of any use in the guidance of pupils during the high-school period, the results should be available when the pupils enter the high school. The writer can see very little excuse for delaying the tests until the twelfth grade unless the tests are to be used for diagnostic purposes for college.

13. The record of letter men and managers of sports may properly be kept by the coach or physical director.

The public school should be a co-operative enterprise carried on collectively by teachers, principals, superintendents, school committees, and the public, and there is no reason why data on any of the items in the questionnaire should be withheld from the superintendent of schools or from the school committee. If an undesirable situation obtains within the school, the facts of the difficulty should be uncovered and presented to the proper authorities in order that the conditions may be rectified.

The writer realizes that, if an unfortunate selection of teachers

should be made, the distribution of teachers' marks and the results of college-entrance examinations perhaps should not be announced to the public for a short period of time, but this should be only a temporary condition. Ordinarily, the records of the public school should be open to public inspection.

CONCLUSION

The writer presents the items listed in the preceding questionnaire as desirable information to be kept on file in the office of the high-school principal to aid in making reports and to aid in various investigations which may be made concerning the school from time to time. It seems desirable that there should be adequate clerical assistance in order that the information may be kept up to date so that it can be used for the best interests of the pupils, the school, and the community.

A HIGH-SCHOOL EMPLOYMENT BUREAU

NORA DODSON
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Many high-school pupils seek permanent employment as soon as they graduate. Many others find it necessary to work during the summer months. In order to secure for such boys and girls the work for which they are best fitted, an employment bureau has been established in the schools of Hazleton, Pennsylvania. The bureau attempts to meet the needs of pupils in both the junior high school and the senior high school. This article, however, deals with the senior high school branch, as it is of this department that the writer has charge.

Business men and others wishing to employ pupils notify the school, stating the kind of help wanted and the qualifications necessary. Thus, the bureau acts as a sort of clearing-house, assisting the pupil to find the work he desires and is capable of doing and aiding the prospective employer in finding someone who will do the required work satisfactorily.

A large commercial class is graduated each year; of course, the pupils in this class are preparing to enter the business world at once. Many other pupils who do not expect to enter higher schools want employment of various kinds. There are also many boys and girls who wish to work during the summer—those planning to attend higher schools and those who have not finished their high-school courses. It is more difficult to place the young people in this last group, for there are comparatively few temporary jobs. Furthermore, unless they need extra help merely for a short time, most employers are unwilling to risk losing a worker just about the time he has been trained to do his work. Unfortunately, there are also many pupils who find it necessary to work part time during the school year. To them are open such jobs as working in a store, serving as "mother's helper," running an elevator, driving a car, and doing housework. Of these, the first two are by far the most popular. The last is

undoubtedly the least popular. Indeed, it is not often that pupils are willing to do housework; however, when conditions are good, sometimes a girl can do better in work of this kind than in other types of work which, on the surface, appear more desirable. It is perhaps unnecessary to say that, before placing a pupil in any position, one must be certain that the conditions surrounding that position are satisfactory.

Let it be understood that the bureau does not encourage pupils to work during the school year. Indeed, it does all that it can to discourage them and does not place pupils in part-time work unless conditions appear to demand it. Then, only those are sent out who have good scholarship records and who seem to be strong enough physically to carry the double burden. In all cases except those of Seniors in the commercial course the parent's written consent is required. Furthermore, the state labor laws must be observed; the pupil must take out the necessary working permit before he reports for work.

Such, in general, is the function of the Hazleton High School Employment Bureau. However, the personal element—the attention to the individual and his needs and preferences—is, in the opinion of the writer, far more important. A personal interview, long enough to allow for a friendly chat and to avoid merely asking a list of questions, is essential.

The interviewer should have a record card large enough to contain the desired information in compact, easily obtainable form. Such record cards should be filed under lock and key, for the interviewer should regard as sacred the information received and the confidences won. By a friendly attitude, he will learn much about the pupil, and he must learn to draw conclusions not only from what he hears but from what he sees.

Record cards will vary with the plan and the purpose of the interviews; however, there are certain items which will be found indispensable. Of these, obviously, the first is the identification of the pupil: name, sex, race, nationality, address, and telephone number. Sometimes the pupil has no telephone; in this case, it is important that the card contain the name and telephone number of the nearest neighbor who will call him to the telephone. This may seem unnec-

essary, and, if the pupil is placed during the school year, it probably is. No one who has not been confronted with the situation, however, knows the feeling of exasperation which one has when a job is awaiting John Jones after school has closed and there is no means of reaching him. It is well, also, to record the father's name and business address. There are times, too, when it is necessary to know a pupil's church affiliation; many employers do not take this matter into consideration, but it is well to be prepared for the occasional instance when the information is necessary. The writer has also found it valuable to have a record of any foreign languages which the pupil may speak; sometimes, for example, a boy can secure a position in a bank which has a large foreign clientèle. Occasionally, conditions in the home are such that they must be considered when one is placing a pupil. The father may have died, or he may have been ill for a long time; there may be several children to be supported; other things being equal, the child from such a home should have the preference. Finally, such data as the grade, the number of the home room, and the pupil's age are necessary for purposes of identification.

Inasmuch as the interviewer needs to know as much as possible about the pupil's work in school, the card should also contain space for recording such data as the grades repeated, the grades skipped, the scholarship average in each year of the high school, and the average mark in each subject. Some of these items, of course, are on file in the principal's office. The writer has found, however, that there is an ultimate saving of time if this information is copied on the record card. All the data are then on one card, and it is unnecessary to send each time for the office records. It is important, also, to know whether the pupil plans to enter some higher school and to know his vocational plans and his special interests. All this information helps in securing for a pupil the kind of work for which he is best fitted. It is in this connection that one's advice is most often sought, and it is here that one must be particularly careful. It seems to the writer that when one has helped a pupil to analyze himself, his likes, and his dislikes and to obtain information about the kinds of work in which he is interested—their advantages and disadvantages, the prospects of advancement, and the qualifications required—one has done about all that one can safely do. It would

seem to be the part of wisdom to let the pupil make the final decision.

The question of health plays an important part in selecting a pupil for a given position. Such factors as weak eyes, nervousness, or lameness have to be considered. Many employers regard regularity of attendance at school as an important qualification. Much of the health information can be obtained from the records of the medical examiner.

In the work of placement, a pupil's interests outside the school are often enlightening. Some are leaders in clubs or in church societies; some are interested in music; some few may be taking lessons in art. If one has a knowledge of these interests, one can often place a boy or girl more intelligently. Those who are leaders usually have initiative and dependability—qualities which are invariably in demand. A knowledge of music or art may be required in a position one is asked to fill.

During the interview and also at other times, one's powers of observation will furnish important data which the pupil is imparting unconsciously. These may be recorded for future reference. Such items may include the absence or the excessive use of cosmetics, noticeable neatness or untidiness, immaculate or soiled clothing, the habit of chewing gum, mannerisms, loquaciousness, pertness—in short, any especially good characteristic or any fault which might prejudice a possible employer. If young people could be made to realize how immeasurably employers are influenced by such factors, many undoubtedly would secure better positions and obtain more frequent promotions.

In addition to these very personal items, one should keep a record of any job which the pupil may have had: what it was, where it was, and the pupil's reasons for going to work. If the pupil has a job, the record should show what it is, where it is, whether it is preparing him for the type of work that he is planning to do eventually, and what the remuneration is.

All these questions, however, lead finally to the most important question of all: What kind of position does the boy or girl want to secure? The writer has found it well to have the pupil answer this question in some detail and to have him name a second choice and, if possible, even a third choice. This is most important in the case

of pupils who are graduating, as the assumption is that, unless they plan to enter higher schools, they will almost certainly go to work.

It is advisable to have on the card space for recording the subsequent working history of the pupil: whether he was promoted and how soon; whether he secured work elsewhere. Information of this kind helps one in sending out other pupils and in discovering strength or weakness in the individual's preparation. Furthermore, one is in a position to help the boy or girl who, for some reason, is out of employment.

We are urging the pupils, as they leave us, to keep in contact with the employment bureau. We are trying to educate them to think of it as theirs, to remember it, and to regard it as ready to help them. While we are trying to supply the employer with the type of worker he needs, we are primarily trying to help the boys and girls of the school to secure the kind of work which will make them happy, useful citizens of the community in which they live.

THE COLLEGE FRESHMAN'S RANGE OF INFORMATION IN THE SOCIAL SCIENCES

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In the discussions regarding the importance of the social sciences, their place in the secondary-school curriculum, or the nature of their content, little evidence has been produced to show either how much information is considered essential or how much the secondary-school graduate actually knows. The reason, of course, is clear. Until very recently it has not been feasible to measure abilities in any of the social sciences in any concrete way. With the development of the educational scales for American history and geography, a far more definite, concrete idea may be obtained both of present ranges of information and of desired ranges of information in these phases of the social sciences.

With the use of these instruments, it has been shown that, in the case of ranges of information in American history, just as in the case of spelling ability, there is a definite quantitative relation between the number of simple facts and the number of more complex facts that are known by an individual.[1] So stable, in fact, is this relation that, if one knows how difficult tasks an eighth-grade pupil can do with a correctness of 50 per cent, one can indicate with an average error of only about 2 per cent how difficult high-school tasks this same pupil can do with a correctness of 25 per cent, 75 per cent, or any percentage between 10 and 90. Then, too, the scales, unlike the usual classroom test or even the more carefully devised standardized test, enable one to examine and compare the tasks which the pupil can do with a correctness, respectively, of 50 per cent, 25 per cent, and 75 per cent. In the same way, the tasks which can be done with a correctness of 50 per cent by pupils varying widely in ranges of information may be examined and compared.

These results and possibilities of measurement in the social

[1] Marvin J. Van Wagenen, "Some Implications of the Revised Van Wagenen History Scales," *Teachers College Record*, XXVII (October, 1925), 142–48.

sciences are significant alike to the high-school teacher, the college instructor, and the research student in education and the social sciences. In view of this fact, the question of prerequisite courses becomes of vital importance. The student's progress in the social sciences in high school or in college is conditioned by his ranges of information as well as by his intelligence, ability to read, earnestness, and the quality of his instruction. Indeed, the results presented in this article make it clear that a student who begins his course in American history in the secondary school with only a seventh-grade range of information is able to acquire in a high-school course in American history only the information that is commonly taught in the eighth grade; he cannot assimilate the information that is the usual content of the high-school course. The complex facts and relations in the social sciences can be comprehended only when there is available a sufficient proportion of simpler facts to allow the more complex relations to be grasped. This does not necessarily imply that all pupils must know the same facts, but they do need to know something like the same proportion of simple facts in order to grasp the more complex facts as they are presented in the secondary-school and college courses. A prerequisite course is not a mere process of pupil drill in certain facts but rather an educational process of extending the pupil's range of information so that he will be able accurately to comprehend relations that grow more and more subtle.

It is just as essential, however, to consider attainment for various ends in similar terms. In view of the increasing emphasis that is being placed on the social sciences in both elementary and secondary education, of the prominent place they occupy in college curriculums, and of the obvious value of their contribution to the solution of the problems of a social life and civilization continually growing more complex, it is important to determine the ranges of information in these fields that it is desirable for laymen to possess and also to ascertain the extent of their present knowledge. For the purpose of calling attention to the importance of these problems and the necessity for their serious consideration and in the hope of suggesting methods of solving them in other fields as well as in the social sciences, a quantitative investigation has been undertaken from several different angles.

In order to determine how wide a range of information beginning college students possess in American history and geography—a question that concerns both the college and the secondary school—approximately eight hundred Freshmen in the University of Minnesota were given an educational scale in each subject. As mental-test scores were available for each of these students, it was possible to show the relation of attainment in these fields of information to intellect.

Table I shows that the mid-score in American history for the men among the lowest 8 per cent of the Freshmen in intellect was only 80. This is the norm for seventh-grade pupils at the end of the grade. For the few women among the lowest 8 per cent of the Freshmen, the mid-score was even below the sixth-grade norm, more than a year below that of the men. Among those of average intelligence for college Freshmen, the men had a mid-score of $85\frac{1}{2}$; the women, $80\frac{1}{2}$. Again there was a difference between the mid-score of the men and that of the women nearly equivalent to the gain made in the elementary school during a whole year. The range of information of the men corresponded to that of average eighth-grade pupils; that of the women, to that of average seventh-grade pupils. In the case of the men with a percentile rank of 93 or higher in the Miller Mental Ability Test, the mid-score was $90\frac{1}{2}$, almost a year in advance of that of the women of similar intellect. That the mid-score of the women among the highest 8 per cent of the college Freshmen should be no higher than the score for an average eighth-grade pupil, whose chances of completing high school are small, is truly astonishing, especially when it is remembered that these women had studied American history in either the junior or senior year in high school. Striking as may seem the marked differences between the mid-scores of groups of men and women similar in intellect, more striking still are the wide variations in mid-scores in the case of the three mental-ability groups; the remarkably narrow ranges of information among the students of all three ability groups will undoubtedly come as a distinct shock to both secondary-school and college instructors in the field of history.

When one turns to the results in geography given in Table II, one discovers that they are even more striking, as well as less assur-

ing, than those in American history. The range of information of the men in the most gifted group in intellect was practically the same

TABLE I

DISTRIBUTION OF SCORES MADE BY COLLEGE FRESHMEN ON AN AMERICAN HISTORY SCALE

SCORE	NORM	UPPER 8 PER CENT IN MENTAL ABILITY		MIDDLE 6 PER CENT IN MENTAL ABILITY		LOWER 8 PER CENT IN MENTAL ABILITY	
		Men	Women	Men	Women	Men	Women
Below 65					2	2	1
65							2
66							
67							
68	Fifth grade						1
69						1	
70							
71					1		
72					1	2	
73					2	1	
74	Sixth grade			1	1	2	1
75			1	2		2	
76						4	1
77						1	
78			1	3	4	2	1
79				2	2	3	
80	Seventh grade			2	1	2	
81			4		1	3	
82		1	1		1	2	
83			1	1	1	2	
84		1	3	3	1	2	
85		2	3	2	1	1	
86	Eighth grade		2	2		2	
87		6		2	2	1	
88		1	1	1	1	4	
89			2	2		1	1
90		1	1		3	1	
91		4	2	2	1		
92		2	1	2		1	
93		1					
94			2	1	2		
95				1		1	
96		2	1				
97		1					
98							
99			2	1			
100 or more		2		2			
Total		24	28	32	28	43	8

as in American history. The mid-score for the women in this group was a full year and a half below that of the men. Among the students of average intellect for college Freshmen, the mid-score of the

men was but slightly above the norm for seventh-grade pupils, while that of the women was slightly below the norm for sixth-grade

TABLE II

DISTRIBUTION OF SCORES MADE BY COLLEGE FRESHMEN ON A GEOGRAPHY SCALE

SCORE	NORM	UPPER 8 PER CENT IN MENTAL ABILITY		MIDDLE 6 PER CENT IN MENTAL ABILITY		LOWER 8 PER CENT IN MENTAL ABILITY	
		Men	Women	Men	Women	Men	Women
Below 56			1		2	2	2
56	Third grade						1
57							
58					1		
59						1	
60							1
61					1	1	1
62	Fourth grade					2	1
63							
64						1	
65					1	1	
66				2	1		
67			1	1	1	1	
68	Fifth grade		1	1	2	3	
69					2	2	1
70				1	1	3	
71				1	1	2	
72			1			2	
73			1		1		1
74	Sixth grade			2	1		
75		1	1	1		1	
76		1	1	1	3	7	
77				2	2		
78				1		2	
79				2	1	1	
80	Seventh grade		5				
81		1	3	1	2	3	
82				1		2	
83		2	1		2		
84		1	4	2			
85		1		2		1	
86	Eighth grade	1	1	1	2	1	
87			2	1	1	3	
88		3	2	2			
89			1	1			
90		3		2			
91		6	1			1	
92		1					
93							
94		1		2			
95		1	1	1			
96							
97		1		1			
Total		24	28	32	28	43	8

pupils of average intellect for the total population. For both the men and the women of this group, the ranges of information were approximately a year lower than in American history. Among the lowest 8 per cent of the college students in intellect, comparatively few of whom will complete their freshman year, the ranges of information in geography for the women were much lower than were those for the men, and those for both men and women were a year or more lower than in the case of American history. To a large extent, of course, this is to be accounted for by the fact that these students studied American history for a half-year or a full year during either their junior or senior year in high school.

In the elementary schools the pupils of average intelligence are expected to attain a range of information in American history equivalent to that possessed by the average group of first-year college men and a year in advance of that of the average group of first-year college women. Although geography is taught only until the end of the seventh grade, the pupils of average intelligence are expected to acquire a range of information quite as wide as that possessed by the average group of first-year college men and a year above that of the average group of first-year college women. Only the very gifted group of first-year college men surpass even by a year the standards set for pupils of average intellect. What is the significance of this situation, startling as it must seem to both secondary-school and college instructors? Does it mean that the standards of the elementary school are too high? Are the gifted pupils acquiring information for which they will have too little use to retain it? Or is the secondary school failing to provide situations necessitating the recall and use of such information in these subjects as will be of value in the social, business, and recreational life of college men and women? The instruments used in gathering the facts regarding the ranges of information of college Freshmen in American history and geography—the educational scales in these subjects—make it feasible to employ three different methods of seeking answers to these questions.

First, in order to ascertain the opinions of people actively engaged in education, a group of 125 people, consisting of superintendents of small school systems, principals of elementary schools

and high schools, and high-school teachers, were requested to indicate on copies of educational scales in both American history and geography all the items which they considered to be unessential information for the least intelligent eighth-grade pupils among the best 25 per cent in intellect. This is the group from which the college Freshmen are almost entirely drawn. Those of average intellect among college Freshmen would represent a very high selection even among this group of pupils. As a consequence, the opinions of these school people would indicate standards much too low for the groups around which the present discussion has mainly centered. Yet when this group of people actively engaged in school work marked out all the items that they considered would not be needed by the least intelligent of these superior pupils in either business or social life or in the comprehension or interpretation of whatever reading they might well be expected to do, the results tended to confirm the necessity of maintaining or even raising the present elementary-school standards. After the tests had been scored just as if the items crossed out had been answered incorrectly, the mid-score for the superior pupils was found to be 96 for range of information in American history and 92 for range of information in geography. The present elementary-school standards for these same pupils are 92 in American history and 86 in geography. Even the mid-scores of the small group of most gifted men were lower than the standards set by the 125 educators for individuals closely corresponding to the lowest 8 per cent of college Freshmen. The opinions of these 125 people, representative of the administrative and teaching population of our smaller cities and towns, may, of course, be called into question, as may all opinions. A repetition of the same program with a somewhat smaller group made it clear that the opinions expressed were representative of the administrative and teaching staffs of the smaller cities and towns of the Middle West.

A second method of determining answers to the questions raised was the measurement of the ranges of information in American history and in geography of these same 125 educators. After marking the test items as they were directed, they were requested to answer as many of the questions as they could. For this group, none of whom were teaching either American history or geography, the mid-

scores in American history and geography were 89½ and 89, respectively. These mid-scores correspond very closely to the mid-scores of the best 8 per cent of the first-year college men and considerably surpass the mid-scores of the most intelligent 8 per cent of the first-year college women. Among the group of educators, two out of each five were women; yet the mid-scores of the educators surpass the mid-scores of the most intelligent 8 per cent of the college Freshmen. That this group may have surpassed in brightness the average among the college Freshmen is probable, but it is highly improbable that more than a very few of them would have been found in the upper 8 per cent of the college Freshmen in brightness. Even so, more than 9 per cent of the educators surpassed the college Freshman who stood highest in American history and more than 15 per cent surpassed the college Freshman who stood highest in geography. These results, of course, may be challenged as unrepresentative of people of their intellectual caliber in other activities. This may be true, despite the lack of any evidence to confirm it. It might even be true to a considerable extent without in any way arguing for lower standards in the elementary school, for it would look rather toward providing situations in the social sciences in the high school that would extend, as well as make functional, the ranges of information acquired in American history and geography in the elementary school.

More convincing of the need of wider ranges of information in both American history and geography will be the proportions of college students in each of the ability groups failing to answer some of the questions typical of the abilities of average sixth- and seventh-grade pupils, very few of whom complete the work of the secondary school. The four following tasks are typical of those which pupils of average mental ability are able to do at the end of the sixth grade with a correctness of approximately 50 per cent; that is, on the average, the pupils are able to answer correctly two of each four questions of this difficulty.

1. After each of the following articles write the name of the South American country that leads in its production.
   a) Coffee _____
   b) Wheat _____
   c) Rubber _____

2. Arrange the following countries of Asia in the order of their size by putting a 1 in front of the largest one, a 2 in front of the next largest one, and so on until you have put a 5 in front of the smallest one.
   a) _____ Japan
   b) _____ China
   c) _____ India
   d) _____ Siberia
   e) _____ Java
3. Which of these things: settling, nation-making, or exploring—was chiefly being done in America—
   a) Between 1500 and 1600? _____
   b) Between 1600 and 1700? _____
   c) Between 1775 and 1800? _____
4. From what European country did the people come who settled—
   a) Along the Hudson River? _____
   b) At Philadelphia? _____
   c) Along the St. Lawrence River? _____
   d) At Plymouth? _____

In the case of the first two questions, those in geography, only 51 per cent of the gifted group of college Freshmen answered the first question correctly, and only 25 per cent more answered two of the three items correctly; only 50 per cent answered the second question without error, while 38 per cent more made one error in answering it. The gifted college Freshmen thus made a somewhat better showing than sixth-grade pupils of average mental ability. Not as much can be said, however, for the middle group of college students. Only 35 per cent of them correctly answered either Question 1 or Question 2, and only 25 per cent more answered either question with but one error. In the case of the lowest 8 per cent of the college Freshmen, only 16 per cent replied correctly to the first question and 18 per cent to the second, while 30 per cent more made one error in answering the first question, and 18 per cent more made one error in answering the second question. This group of college Freshmen thus made a far poorer showing than sixth-grade pupils of only average mental ability.

That the two geography questions of equal difficulty for elementary-school pupils should be so nearly of equal difficulty for each of the three groups of college students may strike the reader as surprising, but this is the general tendency. Only where questions

differ markedly in form or in the nature of the content, as in the case of the two questions in American history, do marked variations in difficulty appear for different maturity groups. To the college student the content of Question 3 offers little of the difficulty of comprehension that it offers to the sixth-grade pupil; hence it is a very simple task to do. Yet, simple as it may seem, 4 per cent of the gifted group, 10 per cent of the average group, and 16 per cent of the lowest group of college Freshmen failed to answer it correctly. In the case of Question 4, the results more nearly approximated those in geography. Only 73 per cent of the gifted group, 53 per cent of the average group, and 36 per cent of the lowest group of college Freshmen correctly did this typical sixth-grade task, which is usually done correctly by 50 per cent of the pupils of average mental ability at the end of the sixth grade. The American history tasks seem easier for the college Freshman than do geography tasks of the same difficulty, but it must not be overlooked that American history was studied by these students during their high-school course, while geography received no attention except incidentally.

Two tasks of seventh-grade difficulty, one in American history and one in geography, which may seem of more vital interest to adults gave results strikingly similar to those from the sixth-grade tasks.

5. Put a 1 in front of the state that you would go through first in traveling from New York to St. Louis, a 2 in front of the next one to be traveled through, and so on until a 5 is put before the last state traversed.
   a) _____ Ohio
   b) _____ Pennsylvania
   c) _____ Illinois
   d) _____ New Jersey
   e) _____ Indiana
6. Which *one* of these things were most of the white people in America doing before the Revolutionary War: working in stores, working in factories, hunting and fishing, working on farms, or fighting the Indians?

In the case of the question regarding the order in which the states would be traversed in going from New York to St. Louis, 51 per cent of the gifted group of college Freshmen indicated the order correctly, with 32 per cent more making one error; 41 per cent of the average group knew the order, while 33 per cent more made one

error; only 26 per cent of the lowest 8 per cent of the college Freshmen were able to give the correct order, and only 24 per cent more could give the order with not more than one error. Not only are questions of equal difficulty for elementary-school pupils of approximately equal difficulty for adults, but the questions that are more difficult for elementary-school pupils are correspondingly more difficult for college Freshmen. The failure of the college Freshmen on these questions was not due to the fact that the information was of the simple kind they had learned and, having no further use for it, had promptly forgotten.

The results for the corresponding typical seventh-grade task in American history are strikingly similar to those for the task in geography. Of the gifted group of Freshmen, 53 per cent answered the question correctly; of the average group, 51 per cent; and of the lowest group, only 28 per cent. Only the average and the gifted groups of the college Freshmen did as well as seventh-grade pupils of average mental ability.

An analysis of the individual answers to the geography task surprises one. For instance, 4 per cent of the gifted group of the college Freshmen on their way from New York to St. Louis would travel through Pennsylvania before reaching New Jersey. Two per cent would traverse Ohio before coming to either New Jersey or Pennsylvania, while another 2 per cent would travel through both Indiana and Illinois before reaching Ohio. Only 51 per cent knew that Indiana is fourth in the series; the other 49 per cent were about equally divided in placing Indiana before Ohio or after Illinois. Of the lowest group of the college Freshmen, only 62 per cent knew that New Jersey is the first state they would traverse in going by the route indicated. Fourteen per cent would at once plunge into either Indiana or Illinois on leaving New York and just before reaching St. Louis would expect to find themselves in either Ohio or Pennsylvania. Of the lowest 8 per cent of the college Freshmen, only 36 per cent knew that Illinois would be the last state traversed in their imaginary journey, while 32 per cent thought that Indiana is nearer St. Louis than is Illinois; the remaining 32 per cent were uncertain whether New Jersey, Pennsylvania, or Ohio would be the last state to be traversed before arriving at St. Louis.

Perhaps it is too much to expect college Freshmen to know something about the location of the various states of the Union with reference to one another, but their information about other phases of geography was not discovered to be any more extensive. Even among the gifted college Freshmen, only 21 per cent could arrange the states of Indiana, Nevada, Maine, Massachusetts, and Oregon in the order of the density of their population. Nineteen per cent could not give the states in which the four well-known cities of New Orleans, Pittsburgh, Milwaukee, and Baltimore are located. Less than 10 per cent could correctly describe the surface of Kansas, Nevada, Wyoming, Illinois, West Virginia, and California as mainly mountainous, a plain, or a plateau. The less gifted students, of course, made an even poorer showing. Of the lowest 8 per cent in intellect, 8 per cent thought that Oregon is more densely populated than Massachusetts; only 56 per cent knew that Kansas and Illinois are mainly plains rather than plateaus or mountainous, while 70 per cent were unable to give the states in which the cities of New Orleans, Pittsburgh, Milwaukee, and Baltimore are located.

The lack of information about American history among the college Freshmen is little less surprising. In the case of the typical seventh-grade question regarding the principal occupation of the colonists up to 1775, 32 per cent of the gifted students and 54 per cent of the lowest 8 per cent thought that most of the white people were engaged in fighting the Indians. Perhaps the undue amount of attention given in the textbooks of American history to the Indian wars is responsible for this striking misconception of colonial life. Such a condition, however, could not account for the fact that more than one-third of the gifted students and more than two-thirds of the lowest 8 per cent in intellect did not know that the southern states were in favor of the suppression of abolition petitions in Congress and were opposed to a protective tariff on manufactured goods between 1840 and 1850.

"What important means of communication was invented and put into use between 1835 and 1845, between 1870 and 1880, between 1895 and 1910?" and "What new means of transportation came into use in the United States during each of the following periods: 1805–15, 1830–40, 1890–1900?" are questions typical of the

ability of pupils of average intellect when they complete the eighth grade; that is, they can be answered by such pupils with a correctness of about 50 per cent. Yet, even among the gifted college Freshmen, only 44 per cent answered the first question correctly and 48 per cent, the second question, with 6 per cent and 34 per cent more, respectively, answering correctly two of the three items. In the case of the lowest 8 per cent of the college Freshmen only 31 per cent answered correctly all three items in the first task and 16 per cent all three items in the second task, two of the three items being answered by 8 per cent more in the first case and by 34 per cent more in the second case. It is not the childishness of the information called for that accounts for the inability of the college Freshmen to answer the questions, for the more difficult the questions are for elementary-school pupils, the more difficult they are for college Freshmen as well.

As compared with elementary-school pupils, college Freshmen have a relatively narrow range of information in both American history and geography. Only the most gifted among the college Freshmen surpass average eighth-grade pupils in either subject. Neither the analytical opinions of educators nor their own ranges of information in these subjects support the view that the standards of the elementary school are either too high or too impractical. The evidence from the answers made by the college Freshmen speaks for itself. That a new emphasis and perhaps a new, as well as more vital, content are needed in the social sciences in the secondary schools seems obvious. That a decidedly more favorable situation exists in the physical sciences and in literature is more a matter of hope than of evidence. It must not be overlooked, however, that quantitative measurements do not create situations but merely reveal tendencies, that they do not correct deficiencies but merely indicate where progress may be made.

A STUDY OF THE RELIABILITY OF AN OBJECTIVE EXAMINATION IN NINTH-GRADE ENGLISH

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Much has been written in the last few years about examinations. Can they measure a pupil's knowledge with any fair degree of accuracy? What kind of examination is most reliable? How should examinations be scored? These and many similar questions have been discussed in current educational literature. Most of the experiments which have been described are the work of experts in the field of education. The present article deals with a study of new-type tests made by a teacher untrained in the construction of such tests; the results, therefore, are probably such as would be obtained by the average teacher.

The purpose of the experiment was to investigate the reliability of an objective examination in ninth-grade English. The examination was given to 301 pupils in twelve classes at the end of the first term of the school year 1925–26.[1]

The available time was a period of forty minutes, of which ten minutes were needed for explanations; thirty minutes were used for the examination itself. Three ten-minute tests were given, the first consisting of sixty recall questions; the second, of sixty five-response items; and the third, of one hundred true-false statements. The time allowance for these tests was based on experimental studies made by Ruch[2] except that the number of items in the recall test was increased from fifty to sixty after it was found that several adults who took the test in advance were able to answer the fifty recall questions in less time than they needed for the sixty five-response items. Only the most able pupils were expected to complete the tests.

In each of the three tests an attempt was made to cover the work

[1] The examination was given at the Roosevelt High School, St. Louis, Missouri, through the courtesy of the principal, Armand R. Miller.

[2] G. M. Ruch, *The Improvement of the Written Examination*, p. 114. Chicago: Scott, Foresman & Co., 1924.

of the entire term. In the recall test thirty-two of the sixty questions were on grammar, thirteen on Longfellow's *Tales of a Wayside Inn*, thirteen on Dickens' *A Christmas Carol*, and two on outside reading. In the five-response test thirty-two of the sixty items were on grammar, thirteen on *Tales of a Wayside Inn*, fourteen on *A Christmas Carol*, and one on outside reading. In the true-false test fifty-five of the one hundred statements were on grammar, twenty-three on *Tales of a Wayside Inn*, twenty on *A Christmas Carol*, and two on outside reading.

On account of the limitations of time, it was impossible to make the extensive preliminary experiments necessary for arranging the questions in the order of difficulty. An effort was made, however, to approximate such an order by placing those questions first which seemed to the examiner to be the easiest. In order that all pupils might have an opportunity to answer items on all parts of the grammar included in the term's work, the questions on grammar in each test were arranged in three cycles, each containing items on punctuation, parts of speech, adjectives, adverbs, nouns, pronouns, and sentence structure. The first cycle was thought to be somewhat easier than the second, and the second easier than the third. The questions on literature were alternated with those on grammar.

In order to make clear the nature of the examination, five random questions from each test are here given.

RECALL TEST

Words which are independent by address are in what case?
Whose name was written on the tombstone in *A Christmas Carol?*
"Slowly" is what kind of adverb?
In what town is the Wayside Inn located?
Who wrote *The Last of the Mohicans?*

FIVE-RESPONSE TEST

Charles Dickens wrote chiefly (1) poems (2) essays (3) plays (4) histories (5) novels.

Edgar Allan Poe wrote (1) "The Gold Bug" (2) *An Inland Voyage* (3) *The House of Seven Gables* (4) *The Scarlet Letter* (5) *The Spy.*

"Her" is a (1) relative (2) indefinite (3) interrogative (4) personal (5) demonstrative pronoun.

"Loudly rang the bells through the clear cold air." The subject of the sentence is (1) bells (2) loudly (3) air (4) rang (5) through.

"It was Elizabeth whom I wanted to see." "Elizabeth" is (1) the subject (2) in apposition with "whom" (3) the direct object (4) a predicate nominative (5) an indirect object.

TRUE-FALSE TEST

The word "John" is a noun. True False

Indefinite pronouns are usually used as adjectives. True False

In the sentence, "I saw you there," "there" is an adverb of place. True False

Longfellow wrote "The Courtship of Miles Standish." True False

The following sentence is correct: "It's eyes were very bright." True False

In a study of the reliability of a new-type examination there are three questions of special interest: (1) What is the reliability? (2) How does it compare with the results obtained by other investigators in similar fields? (3) How does it compare with the reliability of old-type examinations?

In order to get pairs of tests on which to base a study of reliability, each test was broken into chance halves by a random drawing of numbered slips of paper. The questions corresponding to the first thirty numbers drawn made up Form A of Test 1; the remaining questions made up Form B. A second drawing of thirty numbers from sixty determined Forms A and B of Test 2, and a drawing of fifty numbers from one hundred gave Forms A and B of Test 3. Form A of the three tests and Form B of the three tests made up Form A and Form B, respectively, of the entire examination.

Table I shows the correlation between Forms A and B by the Spearman rank-difference squared method. Table II shows the correlation by Brown's formula. From Table II it may be seen that the reliability of the entire thirty-minute examination for 301 cases is .92; of the ten-minute five-response test, .84; of the ten-minute true-false test, .82; and of the ten-minute recall test, .79. For separate classes the reliabilities of the recall test range from .55 to .90, with the median at .75; of the five-response test, from .47 to .90, with the median at .76; of the true-false test, from .66 to .92, with the median at .82; and of the total, from .80 to .94, with the median at .89. It is interesting to note that, although the true-false test does not have as high a reliability as has the five-response test, its reliabilities in the case of the separate classes are high more uniformly than are those of either of the other tests.

The figures obtained are in general agreement with those obtained by other investigators, as may be seen from Table III.

TABLE I

CORRELATION BETWEEN FORM A AND FORM B OF NEW-TYPE EXAMINATION (SPEARMAN RANK-DIFFERENCE SQUARED METHOD)

Class	Number of Pupils	Recall Test	Five-Response Test	True-false Test	Total
1	29	.657±.071	.775±.050	.798±.046	.884±.027
2	25	.813±.046	.813±.046	.687±.071	.873±.032
3	24	.510±.102	.748±.061	.671±.076	.774±.055
4	25	.640±.080	.704±.068	.713±.066	.828±.042
5	22	.377±.123	.375±.124	.632±.086	.742±.065
6	24	.622±.085	.590±.090	.843±.040	.887±.029
7	26	.478±.102	.548±.093	.734±.061	.812±.045
8	26	.570±.089	.487±.101	.533±.095	.759±.056
9	22	.433±.117	.643±.084	.640±.085	.759±.061
10	22	.633±.086	.479±.111	.794±.053	.868±.035
11	26	.643±.078	.670±.073	.490±.101	.797±.048
12	30	.561±.084	.308±.112	.723±.059	.666±.069
Total	301	.648±.023	.722±.019	.694±.020	.854±.011

TABLE II

CORRELATION BETWEEN FORM A AND FORM B OF NEW-TYPE EXAMINATION (BROWN'S FORMULA)

Class	Number of Pupils	Recall Test	Five-Response Test	True-false Test	Total
1	29	.793	.873	.888	.938
2	25	.897	.897	.814	.932
3	24	.675	.856	.803	.873
4	25	.780	.826	.832	.906
5	22	.548	.545	.775	.852
6	24	.767	.742	.915	.940
7	26	.647	.708	.846	.896
8	26	.726	.655	.695	.863
9	22	.604	.782	.780	.863
10	22	.775	.648	.885	.929
11	26	.783	.802	.658	.887
12	30	.719	.471	.839	.800
Total	301	.786	.839	.819	.921
Median	.....	.747	.762	.823	.892

Wood[1] gave to 440 Freshmen in a course in Contemporary Civilization at Columbia University a two-hour objective examina-

[1] Ben D. Wood, *Measurement in Higher Education*, chap. viii. Yonkers-on-Hudson, New York: World Book Co., 1923.

tion. Thirty-five minutes were allotted to fourteen completion paragraphs, fifteen minutes to sixty-one multiple-response items, and seventy minutes to 139 true-false statements. Wood found the completion and true-false tests, both with reliabilities of .89, ranking above the multiple-response test, with a reliability of .73. A part of this difference, however, can be attributed to the fact that the multiple-response test was only fifteen minutes in length.

Brinkley[1] gave a series of examinations in American history in a New York City high school to classes composed chiefly of twelfth-

TABLE III

A Comparison of the Correlations Obtained in Several Studies

Investigator	Number of Pupils	Time in Minutes	Completion Test	Recall Test	Multiple-Response Test	True-false Test
Wood	117	15–70	.889	.....	.728	.889
Brinkley	95	31	.820	.780	.630	.640
Ruch	135	18.7	.....	.896	.901	.820
Toops*	124	13.8	.....	.764	.755	.798
Hammond	301	10	.....	.786	.844	.819

* Figures quoted from G. M. Ruch and G. D. Stoddard, "Comparative Reliabilities of Five Types of Objective Examinations," *Journal of Educational Psychology*, XVI (February, 1925), 96.

grade pupils. Basing his figures on the scores of ninety-five pupils who took all the tests, he found the completion test to have a reliability of .82; the recall test, .78; the true-false test, .64; and the multiple-response test, .63; all tests being thirty-one minutes in length.

Ruch[2] examined approximately 135 Iowa high-school Seniors in history and social science and found the five-response test to have a reliability of .90; the recall test, .90; and the true-false test, .82; the working units being 18.7 minutes.

The Toops examination,[3] which was on general information, was given to 124 college students. With equal working units of 13.8 minutes, Toops obtained a reliability of .80 for the true-false test

[1] Sterling G. Brinkley, *Values of New Type Examinations in the High School with Special Reference to History*, chap. viii. Teachers College Contributions to Education, No. 161. New York: Teachers College, Columbia University, 1924.

[2] G. M. Ruch, *op. cit.*, chap. v.

[3] Herbert Anderson Toops, *Trade Tests in Education*, pp. 39–51. Teachers College Contributions to Education, No. 115. New York: Teachers College, Columbia University, 1921.

and a reliability of .76 for both the recall test and the five-response test.

The differences in relative rankings of the tests are probably due to variations in subject matter, in homogeneity of students, and in time devoted to the examinations, but they are not vital differences. The important thing is that all the reliabilities are high.

Unfortunately, it was not possible to secure the data necessary for a study of the reliability of essay examinations in the case of the group represented in the present study. The figures of other studies

TABLE IV

COMPARISON OF THE RELIABILITIES OF OLD-TYPE AND NEW-TYPE TESTS

	OLD-TYPE TESTS		NEW-TYPE TESTS	
	Ruch and Stoddard	Monroe and Souders	Thirty-Minute Test	Ten-Minute Tests
Number of classes	.....	66	12	12
Number of pupils in classes	.....	10–88	22–30	22–30
Highest r	.90	.95	.94	.92
Median r	.55*	.65	.89	.78
Lowest r	.35	−.18	.80	.47

* Average.

may be quoted, however, although comparisons on such a basis cannot be regarded as conclusive.

The only figure that was found on the reliability of the essay type of examination for large groups of high-school pupils was that of Brinkley, who obtained a reliability of .72 for tests of thirty-one minutes. Reference to Table III shows that Brinkley found two of the new-type tests less reliable than the essay.

Figures for individual classes have been given in two studies. Ruch and Stoddard state that "a sampling of several hundred final examinations yielded reliability coefficients of from .35 to .90 for thirty- to sixty-minute examinations, the average being about .55."[1] In an extensive survey made in Illinois high schools in sixty-six classes, ranging in size from ten to eighty-eight pupils, in arithmetic, algebra, language, literature, English, history, geography, civics, Latin, spelling, geometry, Spanish, German, and commerce, Monroe

[1] G. M. Ruch and G. D. Stoddard, *op. cit.*, p. 97.

and Souders[1] found reliability coefficients varying from −.18 to .95, with the median at .65. The time allowances for these examinations were not stated.

The results of the investigations made by Ruch and Stoddard and Monroe and Souders of old-type tests are compared in Table IV with the results for new-type tests obtained in the present study in the case of separate classes. In the case of the full thirty-minute new-type test, the reliability coefficients for the twelve classes ranged from .80 to .94, with the median at .89. When the results for the three ten-minute parts of the new-type test were considered separately, the reliability coefficients ranged from .47 to .92, with the median at .78.

CONCLUSIONS

From the study here reported the following conclusions may be drawn. (1) Although the present experiment shows a reliability of .84 for a ten-minute five-response test, a reliability of .82 for a ten-minute true-false test, and a reliability of .79 for a ten-minute recall test, the differences are so slight and the disagreement among other investigators great enough that no one of these forms of new-type tests can be said to be definitely superior to the others. (2) Although Brinkley and Monroe and Souders found old-type tests to have satisfactory reliabilities, the studies of Wood, Ruch, Toops, and the writer indicate that, in general, the new-type test has a reliability higher than the reliabilities obtained by either Brinkley or Monroe and Souders for most essay examinations.

[1] Walter S. Monroe assisted by Lloyd B. Souders, *The Present Status of Written Examinations and Suggestions for Their Improvement*, chap. iv. Bureau of Educational Research Bulletin No. 17. University of Illinois Bulletin, Vol. XXI, No. 13. Urbana, Illinois: University of Illinois, 1923.

THE FIVE-PERIOD PROGRAM IN THE SIX-YEAR HIGH SCHOOL

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The teachers who were in service both before and since the advent of the six-year high school freely admit that, while many former school problems are solved, not a few new problems present themselves. In fact, good teachers can yet be found who doubt the superiority of the new type of organization and who would probably welcome a return to the former type of organization. Most teachers, however, welcome the six-year high school as an opportunity to introduce belated reforms.

As in the case of all reform movements, progress is made more rapidly in some places than in others. Some communities are not receptive to change, while other communities go to the opposite extreme and exhaust their energy in "chasing rainbows." The recent school-reform movement is no exception.

Some schools have complied with the letter of the movement without conforming to its spirit. In some cases the seventh and eighth grades are housed with the high school. A single time schedule is adopted, and one or two teachers are permitted to devote their entire time to these two grades. Some school systems house the seventh and eighth grades with the high school, use only one study program, and provide for departmental teaching in part but have altered the course of study for these grades either very little or not at all.

Some schools, possibly the school in Cayuga, Indiana, are wasting time by experimenting too much. Nevertheless, because of persistent inquiries with regard to our plan, the following description is presented as a possible aid to others.

When we organized a six-year high school, we simply provided seating facilities in the high-school assembly for the seventh and eighth grades, arranged for a single time schedule, and hired teachers who were qualified to teach in all six grades. This being done, we

adjusted our curriculum to meet the state requirements and applied for and received the six-year commission. Presumably, we had accomplished something. The fundamental objection to this procedure is that the seventh and eighth grades are made to conform to the high-school program. The high school is asked to share its prestige with the two upper grades of the elementary school, while these grades are asked to renounce all their customs and mores. In short, the two grades are accommodated in the school, but real assimilation is slow and many difficulties are encountered.

The faculty committee appointed to investigate the difficulties and recommend measures for improvement reported (1) that the seventh-, eighth-, and ninth-grade pupils wasted time because of the inefficient study program; (2) that the teachers in charge of the study hall were often unable to give assistance to pupils having difficulty or the assistance given did not always accord with the wishes of the particular instructor; (3) that the teachers in charge of the study hall found pupils who were not enrolled in their classes difficult to manage. The committee recommended that, if a teacher proficient in supervising study could not be secured, arrangements be made whereby each teacher could supervise the study in her own classes and, if possible, be relieved of study-hall duty.

After considerable discussion, the following plan was adopted. The daily program was divided into two sessions, consisting of periods of sixty-five minutes each, exclusive of a fifteen-minute convocation period, thus making three periods in the morning and two in the afternoon. The pupils remain in the classroom the full sixty-five minutes. Each period is divided into two parts; one part is devoted to recitation and the other part to study. In the three upper grades the division is forty minutes for recitation and twenty-five minutes for study; in the three lower grades, thirty minutes for recitation and thirty-five minutes for study. Each teacher has twenty-five periods a week in the classroom but is relieved of study-hall duty.

This plan is now in effect for the second year, with no increase in the number of teachers employed. In spite of the fact that the enrolment is 180 as compared with 160 when the program was adopted, the teachers report that their duties are lighter now than formerly and are unanimously in favor of the plan.

The thirty-five-minute study period is almost adequate for the seventh, eighth, and ninth grades. Whatever work is expected outside the classroom is definite and objective. The teacher sees that the pupils know exactly what is required and how to do it. Outside work is called for promptly. Obviously, twenty-five minutes is not sufficient time for study for pupils in the upper grades, but it is sufficient to give them a correct start, for twenty-five minutes of intense study has been found equivalent to much longer periods of unorganized study. We are approaching, we hope, supervised study.

The question might be asked: Does this meet the state requirements? The answer is, "Yes." According to the 1925 requirements, the seventh- and eighth-grade pupils are required to recite twenty-five periods a week. All their time is spent in the recitation room. The ninth grade must meet twenty-six periods, but manual training and home economics must meet seven forty-five minute periods. Five sixty-five-minute periods meet this requirement. Obviously, all science classes meet this requirement in a similar manner. The double-period commercial classes simply convene earlier in the morning instead of reporting to the study hall.

Last but not least, the pupils are almost unanimously in favor of the new program, because, as they report, they can do their work with greater satisfaction to themselves and to their teachers.

The state inspector heartily approved the plan when he inspected the school last year.

THE EFFECT OF SUPERVISED STUDY IN KANSAS HIGH SCHOOLS ON SUCCESS IN THE UNIVERSITY OF KANSAS

B. F. WHITE
Superintendent of Schools, Little River, Kansas

The study here reported is an attempt to show the effect of supervised study in high schools of Kansas on success in the University of Kansas. The term "supervised study" as here used means the use of a period of sixty or more minutes for each session in the high school, a part of which is used for discussion and another part of which is definitely set aside for study under the direction of the regular class teacher. The non-supervised recitation is a period of forty or forty-five minutes, no part of which is regularly set aside for study purposes.

Students enrolled as Freshmen in the University of Kansas from thirty-two Class A high schools of Kansas which have supervised study will be compared with students from an equal number of Class A high schools of Kansas which do not have supervised study. The study begins with a total of 499 cases, 250 from schools having supervised study and 249 from schools not having supervised study. A number of these cases were eliminated in order to equalize the groups.

That administrators are interested in the success of supervised study is evidenced by the fact that 48.4 per cent of the principals of the high schools in the North Central Association favor sixty-minute class periods while but 16 per cent of the schools actually have class periods of fifty or more minutes and only 6 per cent have periods longer than sixty minutes.[1] The fact that more principals favor the plan than actually use it seems to indicate that they wish to know more about how it actually works before they put it into practice.

The experiment here discussed takes its results from the actual working conditions of the two groups of schools, using a large number

[1] C. O. Davis, "The Quinquennial Report," in *Proceedings of the Thirtieth Annual Meeting of the North Central Association*, Part I, pp. 54, 47.

of schools of each type with the various factors of the two groups so equated or eliminated that we may be reasonably sure that the conclusions are defensible from a scientific point of view.

The problem of this study, then, is to determine whether students from the thirty-two high schools having supervised study were able to make higher marks in the University of Kansas than an equal number of students from the thirty-two corresponding high schools of the regular type.

The writer made a careful study of the reports sent by the Kansas high-school principals to the state superintendent of schools for the school year 1922–23 and determined from them what schools had been maintaining supervised study during the previous year. These reports also contained the official rating of the high schools for that year. Only Class A schools were considered. No schools having class periods of less than sixty minutes were included in the group of schools having supervised study.

The marks made in each subject by each individual considered were copied from the official records of the registrar of the University of Kansas. The marks were weighted according to the plan of giving 5 points for each hour of A grade, 4 points for each hour of B, 3 points for each hour of C, 2 points for each hour of D, and 1 point for each hour of failing or incomplete work. The total number of points gained from all the hours of work was then divided by the number of hours which the student had carried or attempted to carry. This gave each a weighted score of somewhere from 1 to 5, according to the kind of work done.

From the records of the Department of Psychology of the University of Kansas, the author copied the scores on the Otis Group Intelligence Scale, Advanced Examination, made by the Freshmen under consideration. These scores were then translated according to the table on page 73 of the *Otis Group Intelligence Scale: Manual of Directions*. This gave each student a mental age, which was used later for the purpose of making equivalent groups.

The 499 names used to begin the study were copied from the student directory of the University of Kansas. Beginning at the first of the alphabet, the names of all the freshman students from the high schools considered were copied until a total of 499 were listed.

A total number of 103 cases were eliminated because the university work was not pursued long enough to be entered on the record of the registrar even though the student was listed in the directory, because the records showed that the student withdrew before the middle of the school year, or because the intelligence score of the student could not be located.

A number was assigned to each of the 396 remaining individuals. The supervised-study group and the non-supervised-study group were each divided into sex groups. Each sex group was arranged according to mental age, the individual with the highest mental age appearing at the top of the list. All who were more than twenty-one or less than seventeen years of age were eliminated because they were too far from the normal chronological age. From the group having the higher mental ages, all above the highest of the contrasting group were eliminated. Likewise, from the group having the lower mental ages, all below the lowest of the contrasting group were eliminated. These last three considerations eliminated thirty-nine cases.

The next step was to divide each of the main groups into smaller divisions, the various divisions being made up of those in each six months of mental age. Within each of these divisions the individuals were paired so far as possible for both mental age and chronological age. It was necessary to eliminate still further in order to get equal numbers within each division of the contrasting groups; those with either the lowest or the highest chronological ages not already paired were accordingly dropped. This eliminated eighty-seven more cases.

This procedure finished the making of the equivalent groups. The study actually began with 270 students, of whom 135 were from high schools having supervised study and 135 were from high schools not having supervised study. Of each 135, 95 were boys and 40 were girls.

The two groups were definitely paired as to sex, mental age, and chronological age. All cases were from Class A high schools of approximately equally varying sizes, from towns with approximately equal total populations. These conditions should give a background of rather balanced environment. The two groups were therefore as nearly equivalent as possible under the circumstances.

Table I shows that the supervised-study group has a mean score which is .09 higher on the weighted scale than the mean score of the non-supervised-study group. This fact having been determined, the next step was to determine the extent to which this difference is really significant.

The P.E. of the difference of the means equals $\sqrt{\text{P.E.}M_1^2+\text{P.E.}M_2^2}$ or .901. The actual difference between the means divided by the P.E. of the difference will show whether the difference is significant. In this case we find that $\frac{.09}{.901}$ equals .1, which is not significant.

TABLE I

MEAN, STANDARD DEVIATION OF THE MEAN, AND PROBABLE ERROR OF THE MEAN OF THE WEIGHTED SCORES OF THE SUPERVISED-STUDY AND NON-SUPERVISED-STUDY GROUPS

	Supervised-Study Group	Non-supervised-Study Group	Both Groups
Number of cases.....	135	135	270
Mean.....	2.98	2.89	2.93
S.D. of mean.....	0.9416	0.9492	0.9454
P.E. of mean.....	0.635	0.640	0.637

In the light of the facts revealed for the 270 cases here considered, we are justified in saying that the supervised-study group has only a very small advantage in meeting the demands made by the University of Kansas in the matter of marks. This difference, of course, applies only to a small percentage of the high-school students who have attended the University of Kansas; hence, one must be very careful in drawing any general conclusions. It is probably true that the better high-school students attend the University of Kansas. It also seems to be true from other studies that the poorer students benefit from supervised study more than do the better students. We are safe in making the statement, however, that, so far as the benefit of supervised study is concerned in the 270 cases studied, the advantage is so small that for this group alone reorganization of a school system to provide for supervised study would hardly be worth while.

TEACHERS OF SOCIAL SCIENCE IN THE TEXAS HIGH SCHOOLS

LEWIS B. COOPER AND B. F. PITTENGER
University of Texas

This article presents data and conclusions bearing on the status of teachers of the social sciences in the high schools of Texas during the school year 1924–25. The data are derived from the high-school directory[1] published by the state department of education and are approximately complete. The term "social science" is used to cover the following subjects: history, economics, sociology, and civics or political science. Every teacher of these subjects in the Texas high

TABLE I

DATA REGARDING THE TEACHERS OF TEXAS

School Group	Number of Schools Included	Total Number of Teachers	Number of Social-Science Teachers	Percentage of Teachers Teaching Social Science
A (1–5 teachers)	277	1,132	406	35.9
B (6–10 teachers)	210	1,568	356	22.7
C (11–25 teachers)	83	1,202	224	18.6
D (26 or more teachers)	44	1,872	280	15.0
Total	614	5,774	1,266	21.9

schools is supposedly represented. A total of 1,266 teachers in 614 high schools have been considered.

Table I is an analytical presentation of facts regarding these teachers and schools, showing the percentage of social-science teachers in terms of size of school. The high schools of Texas are arranged in four groups according to the number of teachers of all subjects. Group A includes 277 high schools with five or less teachers; Group B, 210 high schools with from 6 to 10 teachers; Group C, 83 high schools with from 11 to 25 teachers; and Group D, 44 high schools with more than 25 teachers. This grouping is important, for it is basic to all the tables and most of the discussions which follow.

[1] *Texas High Schools: Directory of Teachers.* Bulletin No. 189. Austin, Texas: State Department of Education, 1925.

It is interesting to note that the social-science teachers make up more than one-fifth of the entire high-school teaching staff of Texas, the percentage ranging progressively from 15 per cent in Group D to nearly 36 per cent in Group A. Roughly, the smaller the high school, the larger the percentage of the staff teaching the social sciences. Probably the chief reasons for the greater percentage in the smaller schools are (1) the fact that the teachers have to combine subjects more frequently in the smaller schools than in the larger schools and (2) the expanded programs and the greater variety of subjects in the larger schools.

TRAINING OF THE SOCIAL-SCIENCE TEACHERS

1. *Attendance at higher institutions.*—Table II presents information as to the training of the social-science teachers in the Texas high

TABLE II

PERCENTAGE DISTRIBUTION OF THE SOCIAL-SCIENCE TEACHERS ON THE BASIS OF THE NUMBER OF YEARS THEY HAVE ATTENDED HIGHER INSTITUTIONS OF LEARNING

School Group	One Year	Two Years	Three Years	Four Years	Five Years	Six Years	Seven or More Years	No Report
A	4.9	23.2	24.9	40.4	3.9	0.7	0.0	2.0
B	2.0	7.6	17.1	59.4	10.7	2.2	0.8	0.3
C	0.0	4.5	10.8	68.9	8.6	3.6	2.3	1.3
D	0.0	4.9	14.9	60.7	14.5	2.5	1.4	1.1

schools in terms of the number of years they have attended higher institutions of learning. Fifty-three per cent of the teachers in Group A have had from one to three years of training in college as compared with approximately 15 per cent of the teachers in Group C. The training of the teachers in Group A is very low as compared with the training of the teachers in the other three groups. This is probably due to the lack of a demand in the small schools for teachers with degrees. Very little difference in the amount of training is shown for the three larger groups. This may be accounted for partly by the fact that the larger schools require a larger percentage of their teachers to have degrees and partly by the fact that the larger schools have attractive features which appeal to the better-trained teachers.

2. *Degrees held.*—Table III is closely related to Table II in that there is a natural relation between the number of years of training and the degrees held. In this table is shown the percentage of social-science teachers holding degrees in each of the four school groups. If a teacher holds two or more degrees, only the highest degree is counted. For example, if a teacher has both the B.A. degree and the M.A. degree, the B.A. degree is not included in the table.

We observe from Table III that Groups C and D have a difference of less than 1 in the percentage of teachers who hold degrees, with Group D standing higher. Group C leads in the percentage of teachers who hold the Bachelor's degree, with 73 per cent; Group A

TABLE III

PERCENTAGE DISTRIBUTION OF THE SOCIAL-SCIENCE TEACHERS ON THE BASIS OF THE DEGREES HELD

School Group	No Degree	B.A. Degree	M.A. Degree	Degrees Higher than the M.A. Degree	No Report
A.....	54.9	38.9	1.0	0.3	4.9
B.....	29.5	58.7	9.3	0.6	2.0
C.....	15.8	73.0	5.4	2.7	3.1
D.....	14.9	69.5	11.7	1.4	2.5

stands lowest, with approximately 39 per cent. Tables II and III show a great need for better-trained teachers in the schools in Group A. This group of small schools is furnishing 54 per cent of the total number of social-science teachers in Texas who have less than the equivalent of four years of college training.

TEACHING ASSIGNMENTS OF THE SOCIAL-SCIENCE TEACHERS

1. *Number of subject combinations required.*—Table IV shows the facts with regard to the number of subject combinations the social-science teachers are required to teach. What is meant by "subject combinations" may be seen from the following illustration: If a teacher were teaching social science, mathematics, and English, he would be considered as teaching a two-subject combination with social science. If he were teaching nothing but social science, he would be considered as teaching no combination. This may be better

It is interesting to note that the social-science teachers make up more than one-fifth of the entire high-school teaching staff of Texas, the percentage ranging progressively from 15 per cent in Group D to nearly 36 per cent in Group A. Roughly, the smaller the high school, the larger the percentage of the staff teaching the social sciences. Probably the chief reasons for the greater percentage in the smaller schools are (1) the fact that the teachers have to combine subjects more frequently in the smaller schools than in the larger schools and (2) the expanded programs and the greater variety of subjects in the larger schools.

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A.....	4.9	23.2	24.9	40.4	3.9	0.7	0.0	2.0
B.....	2.0	7.6	17.1	59.4	10.7	2.2	0.8	0.3
C.....	0.0	4.5	10.8	68.9	8.6	3.6	2.3	1.3
D.....	0.0	4.9	14.9	60.7	14.5	2.5	1.4	1.1

schools in terms of the number of years they have attended higher institutions of learning. Fifty-three per cent of the teachers in Group A have had from one to three years of training in college as compared with approximately 15 per cent of the teachers in Group C. The training of the teachers in Group A is very low as compared with the training of the teachers in the other three groups. This is probably due to the lack of a demand in the small schools for teachers with degrees. Very little difference in the amount of training is shown for the three larger groups. This may be accounted for partly by the fact that the larger schools require a larger percentage of their teachers to have degrees and partly by the fact that the larger schools have attractive features which appeal to the better-trained teachers.

2. *Degrees held.*—Table III is closely related to Table II in that there is a natural relation between the number of years of training and the degrees held. In this table is shown the percentage of social-science teachers holding degrees in each of the four school groups. If a teacher holds two or more degrees, only the highest degree is counted. For example, if a teacher has both the B.A. degree and the M.A. degree, the B.A. degree is not included in the table.

We observe from Table III that Groups C and D have a difference of less than 1 in the percentage of teachers who hold degrees, with Group D standing higher. Group C leads in the percentage of teachers who hold the Bachelor's degree, with 73 per cent; Group A

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School Group	No Degree	B.A. Degree	M.A. Degree	Degrees Higher than the M.A. Degree	No Report
A.....	54.9	38.9	1.0	0.3	4.9
B.....	29.5	58.7	9.3	0.6	2.0
C.....	15.8	73.0	5.4	2.7	3.1
D.....	14.9	69.5	11.7	1.4	2.5

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1. *Number of subject combinations required.*—Table IV shows the facts with regard to the number of subject combinations the social-science teachers are required to teach. What is meant by "subject combinations" may be seen from the following illustration: If a teacher were teaching social science, mathematics, and English, he would be considered as teaching a two-subject combination with social science. If he were teaching nothing but social science, he would be considered as teaching no combination. This may be better

understood by analyzing the information contained in Table IV. This table shows that less than 30 per cent of the social-science teachers in Group D are teaching some other subject, and Table V shows that one-half of these teachers are teaching English as the combined subject. The group of smallest schools has approximately seventy-nine teachers out of a hundred who teach one or more subjects in combination with social science. There is a constant increase in the percentage of teachers who teach no combinations as we go from the small to the large schools. There is a difference of 49 between the percentage of teachers in Group D who are teaching no combinations and the percentage of such teachers in Group A.

TABLE IV

PERCENTAGE DISTRIBUTION OF THE SOCIAL-SCIENCE TEACHERS ON THE BASIS OF THE NUMBER OF SUBJECT COMBINATIONS THEY TEACH

School Group	No Combination	One Combination	Two Combinations	Three Combinations
A.....	20.9	62.1	15.5	1.5
B.....	47.2	43.8	8.7	0.3
C.....	58.4	34.8	6.8	0.0
D.....	70.2	27.0	2.8	0.0

Tables II and III show that the teachers in the larger schools are better prepared so far as the number of years of attendance at higher institutions and the degrees held are concerned. Since the teachers of the larger schools are teaching few combinations, the chances are that a larger percentage of them are teaching the subjects for which their training in higher institutions prepared them. On the other hand, the teachers of Group A are, as a group, poorly trained, and four-fifths of them are required to teach one or more subject combinations.

2. *Subject combinations required.*—Table V shows in detail the subject combinations required of the social-science teachers. Mathematics as a combination with social science leads all other subjects in the schools in Group A. It also ranks higher in this group than in any of the other three groups. Natural science has a continued and rapid decrease as we go from the small to the large schools, while the opposite condition exists in the case of English as a combination with

social science. The other subjects are irregular and do not show any marked tendencies, except that foreign language has a very high rank as a combination subject with social science in the first three groups.

3. *The number of daily recitation periods.*—Table VI shows the distribution of the social-science teachers according to the number of

TABLE V

PERCENTAGE DISTRIBUTION OF THE VARIOUS SUBJECTS TAUGHT IN COMBINATION WITH SOCIAL SCIENCE

School Group	Natural Science	Mathematics	English	Foreign Language	Vocational Subjects	Other Subjects
A.....	22.3	27.7	19.3	20.4	8.9	1.3
B.....	14.7	19.6	22.3	30.8	9.8	2.7
C.....	10.6	27.4	23.0	21.2	7.0	10.6
D.....	9.6	23.4	50.0	6.4	4.3	6.4

daily recitation periods they are required to teach. The schools in Group B have the largest percentage of teachers teaching one, two, three, and four recitation periods a day. This is due to the inclusion of a number of superintendents and principals as social-science teachers. These do not always have a full teaching schedule. The teachers with five recitation periods a day tend to become more

TABLE VI

PERCENTAGE DISTRIBUTION OF THE SOCIAL-SCIENCE TEACHERS ON THE BASIS OF THE NUMBER OF DAILY RECITATION PERIODS TAUGHT

School Group	One Period	Two Periods	Three Periods	Four Periods	Five Periods	Six Periods	Seven or More Periods	No Report
A.....	1.2	4.7	7.6	16.3	44.8	19.0	3.2	3.2
B.....	3.7	5.5	8.1	19.4	40.4	17.1	1.6	4.2
C.....	1.8	4.5	6.8	13.1	53.6	15.8	0.4	4.1
D.....	1.8	1.1	1.8	11.7	68.4	13.8	0.0	1.4

standardized as we go from Group A to Group D. The five-period teaching schedule shows a general increase in the number of teachers per hundred in going from the group of small schools to the group of large schools, while the heavier teaching schedules show a progressive decrease. Very few teachers are reported as teaching seven or more periods a day.

TENURE AND EXPERIENCE OF THE SOCIAL-SCIENCE TEACHERS

1. *The number of years in the present school.*—Table VII presents some very interesting facts with regard to the tenure of the social-science teachers in Texas. The average yearly increase in the total number of social-science teachers is not known; however, if we ignore the natural increase due to the general increase in the total high-school enrolment and curriculum expansion, we see that the percentage of social-science teachers who are teaching their first year in the present high school is very great in the first three school groups. If a longer tenure is desirable for an increase in efficiency, the schools included in these three groups should make an effort to

TABLE VII

PERCENTAGE DISTRIBUTION OF THE SOCIAL-SCIENCE TEACHERS ON THE BASIS OF TENURE IN PRESENT SCHOOL

School Group	One Year	Two Years	Three Years	Four Years	Five Years	Six or More Years	No Report
A	52.7	22.4	9.4	4.7	3.2	4.7	2.9
B	39.6	26.1	10.7	6.2	7.3	9.3	0.8
C	41.4	23.4	14.4	5.4	4.5	9.6	1.4
D	22.0	28.7	9.9	9.2	7.4	22.7	0.0
All groups	40.2	25.1	10.7	6.2	5.5	10.8	1.4

hold their teachers for longer periods. Table VII shows that approximately 53, 40, and 41 per cent of the social-science teachers in Groups A, B, and C, respectively, are new teachers in the school system. In other words, these figures represent the yearly turnover for the teachers in the three groups indicated. On this basis, Group D has a yearly turnover of only 22 per cent. The turnover for all the social-science teachers for the year 1924–25 was 40.2 per cent. Furthermore, 76 per cent of the social-science teachers have been in their respective school systems from one to three years. The relative positions of the four school groups with regard to the percentage of teachers with from one to three years tenure are shown in Table VIII. There is a difference of 24 between the percentage of teachers in Group A and the percentage of teachers in Group D who have taught in their present schools three years or less. Group D, as compared with Group B or Group C, has almost two and one-half

times as many teachers per hundred who have been in their present systems for six or more years.

We may summarize by saying that in Groups B and C there is more than a three-fourths turnover of the social-science teachers by the end of the first three years of tenure, more than a four-fifths turnover in Group A, and about a three-fifths turnover in Group D.

TABLE VIII

PERCENTAGE OF TEACHERS WITH TENURE OF FROM ONE TO THREE YEARS

School Group	Per Cent	Rank
A	84.5	1
B	76.4	3
C	79.2	2
D	60.6	4
All groups	76.0	.....

Each of the four groups seems to lose a large number of teachers at the end of their second year of service in their respective systems.

2. *Teaching experience.*—Table IX presents data bearing on the teaching experience of the social-science teachers. A tendency that was clearly shown in the study but not so well represented by the

TABLE IX

PERCENTAGE DISTRIBUTION OF THE SOCIAL-SCIENCE TEACHERS ON THE BASIS OF THE NUMBER OF YEARS OF TEACHING EXPERIENCE

School Group	One Year	Two Years	Three Years	Four Years	Five Years	Six Years	Seven Years	Eight or More Years	No Report
A	16.3	15.3	10.1	11.3	8.9	6.6	3.2	26.8	1.5
B	11.5	12.6	12.9	11.0	8.4	10.4	2.5	29.8	0.8
C	10.4	13.5	14.9	14.9	6.3	8.6	4.5	25.2	1.8
D	6.0	11.3	9.9	8.5	6.4	8.2	7.8	41.5	0.4

data presented here is that the teachers with only a few years of experience usually move from one school system to another frequently and tend to gravitate from the small to the larger systems where they may enjoy longer tenure. The teachers in Groups B and D have had more experience than the teachers in Groups A and C. This is practically the same situation that was found to exist in the

case of tenure (Table VII). However, there is very little difference in the percentages for Groups A, B, and C with regard to any one of the years of experience indicated in the table. Almost 55 per cent of the teachers in Groups A and C have had four or less years of experience. The arithmetical mean for the teachers in Groups A, B, C, and D who have had seven or less years of experience is 3.20, 3.48, 3.51, and 3.92 years, respectively. The medians for Groups B and D are five and six years of experience, respectively. In Group D, 41.5 per cent of the social-science teachers have had eight or more years of experience.

CONCLUSIONS

The foregoing data seem to warrant the following statements respecting the social-science teachers in the high schools of Texas.

1. More than one out of five of the high-school teachers of Texas teach social-science subjects. There is a progressive decrease in the proportion (from 36 per cent to 15 per cent) in going from the smallest to the largest schools.

2. In training, whether measured by the number of years of higher education or by the possession of a standard degree, the teachers of the smallest schools are very weak. The teachers in the larger schools are better trained, but there is no very evident tendency in schools above the ten-teacher level.

3. The teachers in the small schools are less specialized—that is, teach a greater number of subject combinations—than are the teachers in the large schools. In the small schools mathematics, natural science, and foreign language are the usual combinations with social science; in the large schools English is the combination usually found.

4. The standard daily load of five recitations is uppermost in all school groups but becomes predominant only in the schools with more than ten teachers. The smaller schools are less well standardized in the demands made on the teacher by the program.

5. While local tenure is short in all groups, the turnover among social-science teachers is much greater in the small schools than in the large schools. There is relatively little difference, however, in total teaching experience except in the very large city schools.

Educational Writings

REVIEWS AND BOOK NOTES

An adequate book on psychological tests.—The literature on mental tests has become so bulky and so diversely specialized that it is beyond the grasp of all but a few of the many who have to work with tests. A book which will effectively sift and adequately interpret this literature is certain, therefore, to render a valuable service. The few books which survey the general field are, as a rule, too brief, too elementary, too exclusively concerned with certain aspects—for example, the statistical—or too restricted in certain directions to be entirely satisfying to the serious, yet not too technical, reader. Professor Freeman's latest book[1] will therefore be heartily welcomed. In the reviewer's opinion, it avoids these objections more successfully, and summarizes and interprets the field, exclusive of educational achievement tests, more adequately, than does any other book.

Professor Freeman has sought to emphasize principles rather than mere surface facts and to interpret the results of test research rather than to describe details of technique. The mechanics of testing—giving and scoring tests, tabulating and charting results, calculating percentile ranks and correlation coefficients—are easily learned. To interpret and evaluate the results in terms of their broader relationships is not so easy. It is in the attempt to do this that we find the grossest absurdities and the gravest errors, and it is here that the author wisely places primary emphasis.

An orientation chapter summarizes the present status of mental testing, gives a brief sample test, and suggests the problems which have proved to be of central importance. The mode of approach is historical, the various phases and problems of testing being viewed against the background of their origin and emergence into focal importance. Excellent chapters on the early experimentation with tests, the application of the correlation method, the formation of the Binet scales and their revisions, the development of analytical types of tests and tests of specialized mental capacities, to which few recent books do justice, the development and multiplication of point scales, and the recent attempts to standardize tests of personality traits—all these afford a well-proportioned survey of the field and its major issues. Three chapters on technique and theory discuss, respectively, the problems centering in subject matter, selection and organization of items, and scores and norms. The data which have been ob-

[1] Frank N. Freeman, *Mental Tests: Their History, Principles and Applications.* Boston: Houghton Mifflin Co., 1926. Pp. x+504.

tained by the use of quantitative analytical methods afford the basis for this presentation; but statistical methods are not discussed in detail; they are regarded as a means, not as an end; and the reader is never permitted to forget that tests are to be regarded primarily as of *psychological* importance, not as mere statistical playthings.

A chapter on "How To Tabulate the Results of Tests" illustrates methods of handling scores and of analyzing their significance by means of correlation tables rather than bare coefficients. Another searching chapter considers problems connected with the course of mental growth. In three chapters, the practical applications of tests are discussed, with special reference to education, vocational guidance and selection, and delinquency. The book closes with discussions of "The Interpretation of Intelligence Tests" and "The Nature of Intelligence."

Throughout, Professor Freeman is addressing the thoughtful, intelligent reader—school administrator or student of psychology—who wants not dogma but adequate data and guidance to form his own judgments. Evidence is cited for each position on controverted questions, and the reader is invited to estimate for himself their relative values. There are many footnote references to periodical literature, which, in many cases, is summarized in the text. At the same time, the author is no mere detached bystander to the controversies. His position on disputed issues is, in general, moderate though clear cut and unambiguous, based on a careful weighing of all the evidence. Thus, a critical survey of the views of the more important test theorists leads to the statement that "degrees of intelligence are determined by the general capacity of the psychophysical organism for the formation of new patterns among the elements of experience" (p. 491). Similarly, a detailed survey of the evidence leads to the generalization that "intelligence tests have made a marked advance toward the measurement of native capacity, but their scores are still influenced to a considerable degree by the effects of training, and in their interpretation this influence must always be taken into account" (p. 475).

The book is readable and usable. The style is straightforward and clear. Illustrations of several tests and numerous tables and figures enrich and clarify the presentation. Tabulated information about thirty-seven standard group intelligence tests and a good discussion of the bases for selecting a test, in which "price" and "ease of administration and scoring" are properly included, make it of practical value to the school principal. It will be welcomed by teachers of courses in mental tests, who will find an abundance of significant material not adequately presented in other textbooks. Anyone who has mastered this book should be able to read understandingly most of the current test literature, should have an intelligent notion of the varieties, values, and limitations of tests, and should be fully warned about the pitfalls of interpretation that beset many testers—and not the inexperienced testers only. Professor Freeman's contribution is welcome and valuable.

FORREST A. KINGSBURY

The Dalton Laboratory Plan in the secondary school.—When any new system is adopted in an effort to improve results, there is a tendency to make it an end in itself. The tendency is noticeable and unfortunate in the case of systems of school organization. This is especially evident in many adoptions of the Dalton Plan. It is apparently easier to apply the details of the plan as developed by others than it is to work out adaptations to the conditions of a particular school.

A book entitled, *Educating for Responsibility*,[1] is a welcome exception to this general tendency. It describes an application of the Dalton Plan to the South Philadelphia High School for Girls. The plan has been in operation for three years. The book is a record of the experiment and its results as discussed by the principal of the school and by representatives of six different departments.

The book contains twelve chapters covering 148 pages of text, an adequate bibliography of 7 pages, and an appendix and index of 155 pages. The first four chapters are written by the principal of the school. They are concerned with a summary of the principles underlying the plan as applied, a discussion of the written assignment (which constitutes, of course, the characteristic feature of the plan), a description of the general school organization, and a more detailed account of the plan in terms of the activities of the individual pupil. The next six chapters are concerned with the plan as applied to the teaching of English, the social sciences, science, mathematics, languages, and home economics.

Among the commendable features of the book should be mentioned the Appendix, which contains specimen assignments from each department. These specimen assignments are reproduced in full, thus serving as a check on the teachers' evaluation of results. A method of teaching which depends so largely on the adequacy of written assignments must stand or fall, of course, on the extent to which the assignments worked out by any teaching staff supply more helpful guidance to the individual pupil than the same teaching staff can supply by other means. On the whole, the illustrative assignments impress the reviewer as well constructed. They are clear and specific; they tend to place responsibility on the pupil; and they appear to involve no difficulties which the normal pupil cannot be expected to overcome.

Another commendable feature of the book is a description of the obstacles to any plan of individualized teaching which a large city high school presents. How to adapt the more helpful procedures developed by experimental schools to the standardized conditions of public-school administration is a problem which urgently requires direct investigation. The results of the work of experimental schools are of small use to the public school until its difficulties of administration are met. Crowded buildings, inadequate equipment, inadequate clerical help, school-board legislation of curriculum, and other factors constitute problems which are in many cases more acute than problems in the technique of instruction. The authors have not hesitated to describe such difficulties and to explain the steps taken to meet them.

[1] *Educating for Responsibility.* By Members of the Faculty of the South Philadelphia High School for Girls. New York: Macmillan Co., 1926. Pp. xviii+310.

The book would be more helpful to teachers in other schools if the difficulties met in applying the plan to the different subjects were explicitly stated. In many cases the reader suspects that the facts are given a more favorable interpretation than they deserve, although the general tone of the book does not justify suspicion. It is no more a brief for the Dalton Plan as such than the nature of the book requires. Yet the suspicion might well have been avoided and the value to other teachers increased by a statement of the difficulties which the individual teachers must have encountered in undertaking to reorganize their work on the new basis. A list of such difficulties would greatly benefit administrators who are introducing this or other forms of individualized teaching.

The Dalton Plan as described here and elsewhere seems open to the criticism that pupils may write out assignments to the teacher's satisfaction without grasping the full significance of the material studied. While there are undoubted advantages in allowing a pupil to assume responsibility for his own work, there will always be some pupils who need more direction, and some who need less direction, than the written assignment provides. The best interests of each pupil are met only in part by allowing him to work out a group assignment on his individual responsibility. An individual assignment should be made or the group assignment adapted to individual needs. The next step beyond the written assignment for the class which each pupil completes at his own rate is an individual assignment adapted to the peculiar needs of each pupil. The administrative problems involved in the taking of this next step have never been adequately solved. Some of the chapters in the present book offer helpful leads toward a solution by describing ingenious methods of grouping pupils within a class according to special needs. The account of procedures followed in the individual conferences is also suggestive.

DOUGLAS WAPLES

Methods of teaching in the high school.—On account of the scientific emphasis given to educational procedure in recent years, the whole field of traditional pedagogy is undergoing revision and restatement. Certain principles of technique formerly based on individual authority are being verified and supported by scientific investigation; principles which have been shown by scientific evidence to be fallacious or unsound are being discarded. The teacher in preparation as well as the teacher in service finds it difficult to keep pace with the revisions and changes as they are reported in scattered articles in monographs and journals. A clear-cut statement of the results of scientific investigations of methods of teaching in the high school without all the technical details of the experimental procedure should prove valuable. Such a service has been rendered to high-school teachers by Professor Douglass, of the University of Oregon.[1]

[1] Harl R. Douglass, *Modern Methods in High School Teaching*. Boston: Houghton Mifflin Co., 1926. Pp. xviii+544. $2.25.

Two brief quotations from the Preface will give the author's point of view most concisely.

> The task of this book will be a discussion of the technique of adjusting education to the needs of adolescents, in the light of modern knowledge as to the purposes of secondary education [p. xiv].
>
> The book has been written from the viewpoint that secondary education consists in assisting child nature to grow and unfold and in guiding youth by furnishing experiences favorable to the acquisition of information, habits, skills, ideals, and attitudes which are the expression of the learner's self in the direction of the balanced individual-social aim of the school [p. xvii].

The first two chapters, "Outcomes of Teaching and Their Development" and "Questioning, Assignment, and Review Procedure," are devoted to a discussion of standard procedures in education. The next nine chapters present some of the newer methods in classroom instruction under the headings: "Planning the Instruction," "Supervising Pupil Study," "Teaching Young People How To Study," "Visual Instruction," "Technique of Using Visual Aids," "Socialized Class Procedure," "Technique of Socialized Procedure," "Problem Teaching," and "Project Teaching." Chapters xii–xv are devoted to discussions of "Quizzes, Examinations, and Marking," "The Use of Standard Achievement Tests and Scales," "New Ideas in Written Examinations," and "Adjustment of Instruction to Individual Needs." The final chapter is entitled, "The Technique of Controlled Classroom Experimentation."

The author makes no attempt to treat the methods of teaching specific high-school subjects, limiting himself to the more general principles and technique. He gives a fair and unbiased presentation of each topic discussed; he presents arguments pro and con on controversial subjects and in a large measure leaves the reader to arrive at his own conclusions. The facts are presented in a clear, non-technical style very easy to read. A brief summary at the beginning of each chapter and exercises and a good bibliography at the end of each chapter give the work an added value for use either as a basic text or as collateral reading in courses in high-school methods.

While laying no claim to originality as to the methods presented, the author of this book has done a commendable piece of work in summarizing and organizing in a practical form the methods and devices which have been found most valuable in high-school teaching. The text will undoubtedly be favorably received by teachers in service who seek professional reading materials and by those who are directing the professional preparation of prospective teachers.

A. J. BRUMBAUGH

A compilation of materials relating to extra-class activities in the secondary school.—The problem of extra-curriculum activities in the high-school has received a great deal of attention during the past few years. Within the past year or two several publications dealing with this topic have made their appearance. The fact that the National Society for the Study of Education devoted Part II

of its 1926 yearbook to the subject of extra-curriculum activities shows how important this problem is in present-day education. A wealth of material on the same topic has been published in various educational periodicals.

One of the recent treatments of extra-curriculum activities appears in the form of a handbook[1] of information for high schools. The author considers such activities as tools or agencies to be used in the building and development of character and good citizenship. The teacher is the builder or leader who directs the activities toward the desired end. The raw material used in developing character and citizenship is adolescent boys and girls. Many readers will not agree with the author's exaggerated conception of the changes that take place at adolescence. "Certain physical, mental, moral, and social revolutions and evolutions mark the period of tremendous change and import" (p. 16). While the author presents a brief preliminary treatment of adolescence, he fails to show clearly the relation of the problems of this period to the extra-class activities described in later sections of the book.

The book includes material on the following topics: clubs, the literary society, dramatics, social functions, student government, assemblies, special days, athletics, school publications, commencement, and a number of miscellaneous topics. Certain agencies for supplementing extra-curriculum activities are described briefly: the Junior Red Cross, Boy Scouts, Girl Scouts, Camp Fire Girls, the Hi-Y, etc.

The book shows a decided lack of careful editing. A uniform procedure is not followed in listing the references in the bibliographies and in referring to other writers in the field. At times references are listed alphabetically; at other times no definite order is followed. Certain bibliographies give the titles of the references first; other bibliographies give the names of the authors first. At one point E. A. Lyman is credited with articles that were written by R. L. Lyman (p. 43). A part of the material was collected in courses in Teachers College, Columbia University. Much of the book consists of reprints of articles, long quotations and summaries taken from other books, and detailed lists of literature for literary clubs, commencement programs, etc. No data relative to the status of extra-curriculum activities in the high school are presented.

The foregoing statements suggest that the book is a miscellaneous collection of general information relating to extra-curriculum activities rather than an organized and logical treatment of the problems of the psychology, theory, organization, supervision, and administration of extra-class activities in the secondary school. As such, the book will find a certain field of usefulness; probably the treatment will be of most service to teachers and administrators in the smaller high schools of the country.

CARTER V. GOOD

MIAMI UNIVERSITY

[1] Harold D. Meyer, *A Handbook of Extra-Curricular Activities in the High School.* New York: A. S. Barnes & Co., 1926. Pp. xiv+402. $4.00.

Curriculum research.—The reorganization of the curriculum is receiving much attention from those interested in the problems of education. Interest is evidenced by the considerable number of curriculum investigations discussed in educational periodicals and at teachers' gatherings. A number of new publications devoted wholly to curriculum problems have appeared within the past few years. The Twenty-sixth Yearbook of the National Society for the Study of Education is concerned exclusively with curriculum-making; Part I is a treatment of past and current practices in curriculum construction, and Part II is an attempt to set forth a series of principles or generalizations concerning curriculum-making.

Professor Bobbitt, with the co-operation of a number of graduate students, has prepared a monograph[1] which describes the techniques of certain curriculum investigations and reports the results. In the first chapter the author sets forth his fundamental point of view and defends the technique of activity analysis as a method of curriculum investigation and as a guide in curriculum construction. The critics who maintain that the curriculum should be determined in terms of the philosophy and theory of education will find their objections to activity analysis carefully met in this first chapter and also in the interpretative discussions of succeeding chapters. Since relatively few individuals have achieved the highest and most desirable levels of human performance, a system of education may well seek ultimately to bring all individuals as near this high level as their native capacity and environment will permit. Eventually, the curriculum-maker may have to analyze the activities of different ability groups in order to determine the level of performance members of a given group should attain. The activities of childhood and of all growth levels need to be analyzed before one can be certain what activities are appropriate for a given age or growth level. However, the author considers it advisable, as a starting-point, to analyze human activities at the highest adult level, not for the purpose of discovering what the child should do but for the purpose of securing data that will be of value in determining the activities normal at various age levels.

Major fields of human concern were determined from a study of the topics listed in the *Reader's Guide to Periodical Literature* during the years 1919–21, inclusive; the number of column inches of space devoted to each topic in a newspaper during a certain period; the number of columns devoted to each topic in *The Encyclopaedia Britannica;* the topics apparently referred to by the ten thousand most frequently used English words; and the topics treated in the *Literary Digest.* An effort was made to determine the duties and traits of a good citizen by analyzing newspaper editorials, magazine articles on citizenship, and the opinions of leading citizens as expressed in interviews. Civic and social shortcomings were studied by examining editorials in newspapers and magazines.

[1] Franklin Bobbitt, with the co-operation of Paul L. Palmer, John A. Nietz, Irl H. Dulebohn, Genevieve K. Bixler, Clara H. Lorenzen, Sarah A. Bobbitt, Robert C. Scarf, Harvey C. Lehman, Clara A. Dyer, Harriet M. Mott, and Harold H. Postel, *Curriculum Investigations.* Supplementary Educational Monographs, No. 31. Chicago: Department of Education, University of Chicago, 1926. Pp. viii+204. $1.50.

The social problems of the labor group were determined by analyzing seven labor periodicals and ten widely used books which deal with labor problems. A study of eighteen books mainly of the essay type was made in order to discover the characteristics of human behavior that are approved and those that are disapproved; a canvass of books dealing with character and personal qualities, magazine articles, and books of etiquette was made in order to determine approved social behavior. Shortcomings in the written English of adults were discovered by analyzing letters written for newspaper publication. Three books of popular science and the science articles in a random sampling of five general magazines were studied in order to determine the mathematics used in popular science. The play activities of persons of different ages were discovered by having individuals check in a comprehensive list of play activities those in which they had engaged of their own volition as play during the week preceding the investigation. The grade placement of poems was investigated by analyzing courses of study, elementary-school readers, and books written by specialists in the teaching of English.

This monograph includes 131 tables, which present the data relative to topics, activities, frequencies, etc.; the tables are not listed, however. The author shows clearly that the frequency with which topics appear and the space devoted to them are not necessarily accurate indices of the relative importance of the topics. However, the fact that certain topics are frequently discussed shows them to be matters of major concern and therefore of significance to education; at least, frequency figures are one type of tangible evidence that can be used in evaluating the various fields of human concern. The monograph makes a real contribution to the technique of curriculum investigation. If they were expressed in terms of the labor of a single individual, the researches reported would total many years of effort and painstaking investigation. Textbook writers and curriculum-makers should find the data presented of significance in their work. The monograph suggests the wide range of opportunity for investigation in the field of activity analysis as a guide in curriculum-making.

CARTER V. GOOD

MIAMI UNIVERSITY

A new aim emphasized in the teaching of high-school literature.—At the present time there is considerable difference of opinion among college professors of education and school administrators concerning the courses which should constitute the high-school curriculum and the aims which should control the teaching of these courses once they are determined. The one course that nearly all are agreed upon is English. It is the one subject that is required more often than any other, and it is perhaps equally true that no other subject offered in the high school shows such a dearth of practical results.

A recent book,[1] the joint work of three well-known university professors of

[1] Charles Carpenter Fries, James Holly Hanford, and Harrison Ross Steeves, *The Teaching of Literature*. Newark, New Jersey: Silver Burdett & Co., 1926. Pp. iv+172.

English, purports to state the aims and methods which should control the teaching of high-school literature. The central point of view expressed is that literature is an instrument of liberal culture in that it brings one into intimate contact with the ideas and feelings of others through the medium of the native tongue. Chapter iii, which is the most significant chapter in the book, emphasizes the fact that high-school literature should have a distinct educational aim. This aim is to give pupils a *literary experience*. Literary experience, according to the authors, should be both rich and varied. It should consist primarily of vivid realizations of actions, ideas, and emotions. Literary experience is not a matter of parts but of the whole. It is largely a matter of feeling, and success in using it as an aim in teaching is measured by the keenness with which the pupils experience what the author intended to portray through the characters presented.

In stating that this aim should be uppermost in the teaching of high-school literature, the authors take the reader into their confidence as to how and why they selected it. They reject as inadequate three commonly proposed and utilized methods of selecting aims, namely, by securing teachers' opinions, by making a statistical study of the activities of men and women, and by combining the judgments of members of boards of education, teachers, and prominent citizens. They follow rather the English point of view that each subject of the school curriculum represents a historic type of intellectual activity. They say: "From this point of view we would proceed to define the aims of the teaching of literature from the purposes that have dominated the producers of literature throughout its history and the best thought in the philosophy of art, or aesthetics" (p. 50). Except for footnote references, however, the authors do not elaborate on their method.

After the aim is stated, a chapter is devoted to some underlying principles which the teacher should have in mind in attempting to achieve it. Probably the most helpful contribution is a classification of the various ways in which one may approach literature. The next chapter deals with a stimulating account of our literary heritage. This is followed quite appropriately by a chapter dealing with contemporary literature in the schools. The last two chapters of the book are critical treatises on literature as an art form and on the relation between high-school and college courses in literature. In the last chapter the point is stressed that, if the aim which is set forth is followed, there is no conflict between a practicable course for those preparing for college and an informing course for other pupils.

In evaluating the book, one may justly criticize it both unfavorably and favorably. Its inherent weakness lies in its joint authorship. The chapters representing the different authors are not sufficiently unified. They stand separate and apart very much like magazine articles. On the other hand, the discussion is lucid. The book is written in a style worthy of the subject it develops. It is written for teachers, supposedly educated; consequently the forward march of

the exposition and argument is not marred by paragraph headings and similar devices employed to aid thinking.

R. R. RYDER

PURDUE UNIVERSITY

A supplementary volume for the study of literature.—One of the most promising tendencies in the teaching of literature today is the growing practice of substituting a wide reading of many kinds of literature for an intensive study of a few of the great masterpieces. A recent book,[1] which will prove valuable to both pupils and teachers, will contribute to this end, as it is intended primarily to supplement rather than displace the regular classroom work of high-school Seniors. For schools with limited library facilities the new book will be an especial boon.

With the exception of the novel, which, for obvious reasons, had to be omitted, the book contains readings representing all the chief types of literature. In addition to selections by British and American authors, the book contains productions by Greek, Roman, French, and Russian writers. The organization or grouping of the materials falls under three headings: narrative poetry, lyric poetry, and prose. Under the first division are selections depicting the great epic, the metrical romance, the ballad, the imitation ballad, and the metrical tale. As representative of the imitation ballad, for example, the author furnishes such old-time favorites as Scott's "Jock of Hazeldean," Southey's "The Inchcape Rock," Campbell's "Lord Ullen's Daughter," Kingsley's "The Sands of Dee," and Lanier's "The Ballad of Trees and the Master." The readings in the second division, lyric poetry, are classified under the ode, the sonnet, the elegy, the song, and the simple lyric. Among the poets included under the simple lyric are Dryden, Gray, Cowper, Blake, Wordsworth, Shelley, Keats, Swinburne, Henley, Markham, Foss, Burton, Carman, Hovey, Masefield, Lindsay, Teasdale, Untermeyer, and Kilmer. The prose selections in the book are grouped under the modern drama, the essay, the short-story, the modern speech, letters, diary, and history. Here we find, for example, one-act plays, such as Anton Tchekoff's "A Marriage Proposal" and Caroline C. Lovell's "The War Woman"; essays ranging from Francis Bacon's "Of Expense" to Charles W. Eliot's "What Is an American?"; short stories by such authors as Hawthorne, Poe, Bret Harte, O. Henry, and Anzia Yezierska; orations by Lincoln, Schurz, Wilson, and Roosevelt; as well as letters written by Lamb, Carlyle, Macaulay, Emerson, Browning, and Lowell. The entire book is alluring from the point of view of both the varied character of the authors represented and the intrinsic interest of the readings included.

Opinions will doubtless differ concerning the desirability of classifying selections in accordance with literary forms. Many teachers believe that such an arrangement gives undue attention and emphasis to the *molds* in which emotion and thought find expression and that a better arrangement would be

[1] *Classified Types of Literature.* Edited by Mabel Irene Rich. New York: Century Co., 1926. Pp. xxii+688.

a grouping in accordance with theme. The latter method of classification, it would seem, is more likely to aid pupils to assimilate and appreciate an author's thought than an arrangement in which literary form is stressed. If literary forms are to be taken as the chief objects of study, however, the arrangement in the book under consideration is unsurpassed.

The publishers have done their part in making the book serviceable. The type is clear, the paper fitting, and the binding desirable. The book contains twenty-five full-page illustrations, which add both to the attractiveness of the book and to its utility. At the end of the book the author provides limited but worth-while study helps for the use of pupils, chronological tables of both British and American authors, and an index of all authors and selections included.

HOWARD C. HILL

The historic background for the teaching of manual and industrial education.—The theory and practice of handwork as an integral part of education, both general and vocational, have developed through the course of several centuries. It is nearly fifty years since the first manual-training school in America opened its doors to boys of high-school age. Today there are few cities in which handwork is not taught. It is therefore somewhat surprising that no books have been written outlining the historical development of the manual-arts movement in education. While teachers of the academic subjects have perhaps too frequently been obliged to take history of education as a first or second course in their professional training and have had an opportunity to study several texts, the prospective teacher of shop subjects has not had an opportunity to get a perspective of his field except through the reading of scattered material. This lack of a suitable text has been a detrimental factor in the training of such teachers. A knowledge of the theories and principles of manual arts and acquaintance with the development of the various systems of handwork in Europe and in the United States tend to give the teacher a keener sense of appreciation of the dignity and purpose of his subject as related to the curriculum as a whole.

A recent book[1] tends to meet the need indicated. The author traces the origin and development of the manual-arts movement in Europe from the somewhat vague and idealistic theories of several centuries ago to the best practices of the present. The writings of Comenius and Bacon, the experiments of Francke and Hecker, and the influence of Rousseau, Pestalozzi, Herbart, Froebel, and other educational leaders are presented in an interesting manner. Students of educational progress, regardless of their particular field of specialization, may read the chapters for new and valuable side lights on educational theory and practice.

The second part of the book is devoted to the situation in the United States. Here are portrayed the first attempts to inaugurate manual arts on the basis of

[1] Lewis Flint Anderson, *History of Manual and Industrial School Education*. New York: D. Appleton & Co., 1926. Pp. xii+252.

ideas borrowed from Europe. The Manual Labor Movement and the development of engineering education as an outgrowth of the Land Grant Act, followed by the efforts of Runkle and Woodward, are items of progress. The formation of the Industrial Education Association of New York City to foster the manual-training movement led directly to the development of Teachers College, Columbia University, with its wide influence on all phases of education. The author traces the trend of events leading up to the demand for more specific vocational education and federal aid and to the consequent establishment of the various types of schools and classes under the direct influence of the Smith-Hughes Act of 1917.

The second part of the book is somewhat disappointing. The author may have been limited as to space and for that reason has not treated in detail some topics about which the shop teacher should know. A text for teachers of manual arts and industrial education in the United States can better afford to omit the names and ideas of some Europeans of several centuries ago than to mention only in footnotes such aggressive leaders as Prosser, Snedden, and Leavitt. Another serious omission is the failure to discuss the influence of such men as Bennett, who had much to do with the early development of manual arts at Teachers College and later at the Bradley Polytechnic Institute; Harvey, of the Stout Institute; Haney, of New York, with his contribution of the artistic to manual arts; the late Ira Griffith with his textbooks on shopwork to improve instruction; and many others who have made the manual arts and industrial education a factor in the educational program of the United States.

ALBERT F. SIEPERT

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